1: Gifford E-4,5 (1920-1921) 1929 OU9 Tonga OU9



Tui Vakano to become a Christian was deprived of his title (*liukava* or *liua*, to debase, to dethrone, to depose) by his outraged constituents—a procedure which suggests the Samoan practice. There probably were normally no assemblages (*fono*) in which the people expressed opinions. In ancient *fono*, as in the modern *fono*, the people gathered to hear the orders of the chiefs, not to debate.

The idea prevails that a chief is normally a large, portly person. On one occasion my interpreter remarked, "Can't you see he is a chief? how big he is."

This observation corroborates Wilson (65, pp. 384, lxix):

> In their persons, the men of the superior rank all seem a larger race than ourselves, or the common people . . . . at Tongataboo more muscular, and affecting a more stately gait and superiority. . . . At Tongataboo some [women] were held in highest reverence, and Futtafaihe himself paid one elderly woman the same expression of homage which he received from every other chieftain.
>
> The submission paid to the chiefs, and the distinction of private property were much greater here than at Otaheite.
>
> At Tongataboo, the chiefs, to secure plenty, changed their abodes to other islands (65, p. 385).

Chiefs had many prerogatives. Special bathing holes, many of them wells which required many men to dig, were reserved for the chiefs, though occasionally a chief would allow certain of his retainers to use a bathing well. A few wells, far from the establishment of the chiefs, were permitted to commoners for bathing and drinking water. Should a commoner bathe in a chief's well on the sly, it was believed that he would become ill and die either from the swelling of his abdomen or of his neck. Women had special bathing places set aside for them. On Lifuka, Haapai, the beach on the lee (western) side of the island was tapu to commoners for bathing. Five wells—Utulupe, Vailupesia, Hoaheu, Teleki, and Onemato—all the property and bathing places of former chiefs, have been described elsewhere (25). It is related that at the well called Hoaheu the bathing chiefs were entertained by gladiatorial combats in which two commoners with clubs fought until one was killed. It was at one of these wells, Onemato, that Mariner's patron, Finau, bathed when on his way to visit his brother Tupouniua.

Of food, the chiefs, of course, had the best. First fruits and the first of each catch of fish were brought to them. The milk of only small, quite ripe coconuts was used by chiefs; a retainer presenting a large coconut was liable to be knocked down or beaten. On occasions, such food as the hard Tahitian chestnut (*ifi*) was chewed to a pulp by an attendant before being given to the chief to eat.

Visitors of low rank brought a gift of kava, which was handed to the chief by his matapule. Failure to bring this gift resulted in a severe repri-

1: Gifford E-4,5 (1920-1921) 1929 OU9 Tonga OU9



Cisterns (*lepa*) for conserving rain water for drinking purposes were no doubt shared by several families, though owned by the chiefs. The ancient type of cistern, which has now been replaced by a concrete cistern, was a hole about ten feet deep, dug near a house. The sides and bottom of this hole were beaten with the trunk of a banana tree until they were hard and waterproof. Water was lead from the roof of the house by means of spouts made of bamboo sticks split in halves.

Dug wells, like clay-lined cisterns, were owned by the chiefs. (See p. 124.) These were used as bathing places, fresh or brackish water for this purpose being much appreciated. Each chief usually had such a bathing place near his residence. He might allow his matapule to use it also, but not his commoners. Women had special bathing places. A well or cistern for bathing was called *vaikaukau*. Many of them bore names (25). One just northwest of Nukualofa belongs to the chief Lomu.

## NOTES ON LAND HOLDINGS

### Eua

It is said that originally the northern part of the Eua Island was held by Manumua, anciently a chief of Eua, who was attached to the court of the Tui Tonga, and the southern part by another chief named Vakauta, but that later chiefs from Tongatabu other than the governors sent by the Tui Tonga obtained portions. Both original owners seem to have assigned portions of their holdings to later comers, as the following records show:

Tuanuku, a tract at the southern end of Eua was so named for Havea Tuanuku, younger brother of a former chief Nuku of Tongatabu, who came to Eua in the Eighteenth Century to be matapule to the governor Tukuaho. Manumua gave the tract to Havea Tuanuku and it is held to-day by one of Havea's descendants.

A Tui Kanokupolu came to Houma in Eua Island on a vacation (*takataka i Houma*; literally, walking about in Houma) and begot by a Houma woman a son whom he named Tupou Takatakaihouma and who was called for short Taka. Manumua gave the lad Houma, the north end of the island for his *tofia*.

Manumua gave as a *tofia* to Hama, a soothsayer (*tongafisi*), who came from the Tui Haa Takalaua, a tract which included Ofilei and Sipangai and adjoined that of Taka. Hama also had an *api* called Halahu, at the southern end of the island. The particular spot where he lived is called Matakiata (Seeing-to-Ata), because in his capacity of *tongafisi* he discovered Ata Island. He told his son to go to Ata.

The modern chief Hafoka of Eua, a relative of Veehala of Tongatabu, says that the holdings that were once his forefathers' are now vested in Veehala, who receives the rents from them. Kalau Island, south of Eua, once belonged to Hafoka and was utilized by the people of Haaluma, a former hamlet in Hafoka's *tofia* near the southern end of Eua. It was deserted in Christian times and its people now live in Ohonua.

### Tongatabu

Formerly all the Haa Havea chiefs, as well as the Haa Ngata Motua chiefs, had pieces of land in Hihifo. The Haa Havea chiefs received their

6: Collocott M-5 (no date) 1928 OU9 Tonga OU9



### Stick and Knife

A player held a stick in one hand and struck it with a knife, repeating a rhyme. If he timed his strokes correctly he struck 15 times during the recital of the words.

| | |
|---|---|
| Toki mo toki fekau mai e motu'a toki | Hatchet and hatchet send here *e*, ancient hatchet, |
| Ke ta e toki ta ke fiha, ta ke hongofulu ma nima kauka. | To strike *e*, then strike how many? Strike to ten times and five, *kauka*. |

From these words it would seem that, before the advent of steel knives, a stone hatchet was used in striking the stick.

## Poems Relating to Places

A very large class of poems celebrates the scenic beauties and interesting localities of Tonga. Gifford who has published a number of such compositions (21, pp. 5-19; 22, pp. 91-95), says, "the feeling for the beauties of nature is one of the marked cultural characteristics of the Tongan people."

Following are several more examples of this class of composition; but it is a class to which additions are being made constantly. Although special interest attaches to many of the pieces of the older bards, the native muse is as vigorous as ever. Localities and events are being constantly celebrated. Towards the end of 1911 I met a remarkable old blind bard in the tiny island of Fonoifua, Haapai, whose population numbers only about 35 souls. He took his band of singers into the little native built church, dimly lit by hurricane lanterns, and led them in the singing of his own compositions, pieces of haunting sweetness. Later in a dwelling, they sang a poem celebrating a concrete cistern that had been built on the top of the little hill in the center of the island. This cistern doubly deserved the honor of poetic celebration in that it was the first of its kind in that part of Tonga, and boasted the added glory of a pipe which brought the water from the cistern to the village. I do not know the old blind bard's name, nor have I any of his pieces, but would pay him this small tribute of recognition, for his airs are among the sweetest that I heard in the islands.

### The Environs of Nukualofa[1]

| | |
|---|---|
| Wind from the back of Koloa,[2] | Near the pool Finenaakakala, |
| Beat upon the anchorage of canoes; | Where creeps the *ngingie* of the shore.[3] |
| Come let us praise Nukualofa, | The wild duck cry |
| Let us go up at Tongataeapa,[4] | Put to flight by the noise of the kava. |
| And ask in the homes of the chiefs | Come, let us leave Veitata,[5] |
| Where perchance is Onemalama?[6] | We shall go up at Tukungatokelau,[7] |
| There stood a hala alone | Faletuuloto and Vakahahau, |
| On the mound Puamofefinea, | And the pool of the fish that was buried. |

6: Collocott M-5 (no date) 1928 OU9 Tonga OU9



It is supposed that a shark thus treated is sure to be taken by the same boat on a subsequent occasion.

20. The words *Ho he*, laughter, indicate that the audience will enjoy his composition. This is explained as the noise of blowing on hot food, good, hot food to be thoroughly enjoyed.

## Page 116. Falaolongo

1. The Tongan text of this poem is headed "Sipa oe Meetaki." The word *sipa* seems more properly to be applied to a dance, or to a dance and its song, but evidently here it is used of the song as *meetaki* is one of the dances. The name Mulikihaamea also appears in the heading. The best known man of this name is the chief who was Tui Kanokupolu for a few weeks or days after the assassination of Tukuaho in 1799, and fell in the fighting of that troubled time. What connection he has with the piece is not clear. Perhaps it was first performed before him. Perhaps Mulikihaamea is the name of the bard who composed the piece, and not that of the king. Some of the places mentioned have not been identified; but probably the poem deals almost exclusively with localities in Tongatabu and its neighbor Eua.

2. Falaolongo (Mat of Longo) is probably a slight elevation, natural or artificial, named after Longo, a noted warrior of Holonga, in eastern Tongatabu. A son of Longo was taken to the Tui Tonga, and grew into big boyhood in the entourage of the king, then ran away and returned to his father. This son's name was Kailahi, after whom the cave mentioned was named.

3. The ninth Tui Kanokupolu, about 1780, bore the name Tuihalafatai. The naming of trees is common.

4. The translation reads as though the sighing were that of the wind in the toa tree; but the line might be taken separately from the preceding line, as referring to the murmuring of the sea at Avataliapi.

5. Huafaikitama translated "meadow," may well "be a pool gleaming upward on the shore-flats." In the absence of information as to whether Huafaikitama is a pool on the coast, or a bright patch of verdure or clump of trees in the midst of grass land, it is impossible to say whether *toafa* is shore flats or meadow (downs).

6. Vailahi (Great water), one of the larger bodies of inland water in Tonga is indicated, perhaps the crater lake in Tofua, Haapai, or that of Niuafoou. It is thrown in among mention of places in Tongatabu and Eua, the inference being that the poet has lost his way, has suddenly wandered far afield.

7. Veingangana (Falling water), Vaitakiafale (Led water of house), two streams on the weather coast of Eua. These streams *fekumi*, that is, they seek one another while hidden from one another, or they alternately appear and disappear in the forest. Vaitakiafale is an artificial channel leading off from the stream of which Veingangana is part. It was constructed by a chief who wished to bring the supply of water to his house. It is said, however, that *fale* may not indicate the house of the chief, but an overhanging rock under which the water flows.

8. "Wind from the north," would seem to indicate that the bard had wandered away from places in Tongatabu in the south, but that he now returns thither. Some of the places mentioned, for example Meitumu, are known in Vavau. But it seems best to consider all of the places as in Tongatabu and Eua, with the exception of Vailahi, and understand him as meaning that the wind of his muse is from the north throughout. Names frequently occur in more than one part of the group.

9. Veiatavake (Pool of the tropic bird) is the name of a pool in Eua, in a cave called Faleotaupoou (Virgin's house), where water drips down from stalactites.

10. Veitoto (Pool of blood) is apparently so called because it gleams red in the rays of the rising sun. It is in a cave in Eua, fed by a small stream which runs out of the pool and on the sea. The "dripping water blown about" is the water of this streamlet where it runs out to the coast, and is exposed to the wind.

11. Lokupo, a beach in Eua.

12. The *fatai* is a creeper with scented flowers used in garlands (*Cassytha filiformis?*).

13. Fotumoko is near Fatumu, in eastern Tongatabu.

14. Sacred Coast (Liku Tapu) a portion of the weather-coast of eastern Tongatabu, sacred because of its proximity to the district where the Tui Tonga and his great chiefs lived. Laulea, near Fatumu, which is mentioned further along in the

7: McKern A-4,5 (1920-1921) 1929 OU9 Tonga OU9



The following descriptions include all of the pigeon mounds which a thorough survey of the island could discover. The accuracy of the names cannot be vouched for, as they were supplied by a single informant, the only man found who professed to have any knowledge of the names. Three mounds, Nos. 8, 9, and 10, are classed as pigeon mounds because closely associated with structures known to be pigeon mounds. Native informants were of the opinion that they were used by the pigeon snarers in some capacity, possibly as temporary dwelling sites for the chiefs engaged in the sport. They are like the pigeon mounds which they neighbor except for the absence of any trace of a central pit or basin.

2. Finevalafililolo, in central southern Ualeva, Type II (fig. 6).

Finevalafililolo is composed of a mixture of sand and earth. The centrally placed pit has retaining walls of dressed rectangular slabs of coral stone averaging 3.5 feet in length, 0.7 foot in thickness and standing 2 feet out of the ground. The flat floor of the basin is of earth. The mound is surrounded at irregular intervals by ten funnel-shaped pits averaging 10 feet in depth and 25 to 30 feet in diameter, situated from 25 to 75 feet from the mound base. They are said to have furnished the earth from which the mound is constructed.

3. Siaulufotu, at the south end of Ualeva Island, Type II (fig. 7).

The sloping sides of Siaulufotu are surfaced with stone work consisting of an inner base of rough, loosely piled fragments and an outer coating intact only in places, of rectangular, roughly dressed slabs laid flat, their edges fitting together haphazardly (fig. 7, *c*). These slabs are 2 to 6 feet long, 1.5 to 4 feet wide and 0.3 foot to 0.5 foot thick. The largest slab in place measures 6 by 4 feet by 0.5 foot. The central depression is surrounded by rectangularly dressed slabs of stone averaging slightly more than 3 feet in length, 0.6 foot in thickness, and which stand 2 feet above ground and 1 foot below the bottom of the flat earthen floored basin. A steeply inclined dirt roadway from the northwest leading to the top of the mound is paved with rough stones of varying sizes, their flat sides turned upward to make a comparatively smooth surface.

Siaulufotu is entirely surrounded by a ditch or series of connected pits, 30 feet wide and 12 feet deep, which stands 40 to 50 feet from the mound base. It is thought to have furnished earth for the construction of the mound. Near the northernmost base of the mound is a flat bottomed well called Vaisioata (Water-mirror). Its walls are of loose, roughly piled stone and slant outward from the base at an angle of about 15° from the perpendicular. The rim of the well is 8 feet in diameter and the depth 3 feet, of which 1 foot is under water. The bottom appears to be partly filled with loose debris. About 50 feet east of the mound was found a quarry site where stone for the structure may have been obtained. At this place about a foot of surface soil had been removed, exposing coral "sandstone" which has been cut through in a way to suggest the removal of rectangular slabs.

4. Unnamed mound, Ualeva Island, Type II.

This mound consists of a circular pile of earth with a horizontally flat top. It is 3 to 4 feet high and has a base diameter of 82 feet and a top diameter of 72 feet. The earthen floor of the basin is horizontally flat. Its sides are supported by dressed rectangular slabs of stone practically all the same size, about 3 feet long, 0.6 foot thick, and 2 feet out of the ground. Several large funnel-shaped excavations near the mound probably indicate the source of material for the construction.

7: McKern A-4,5 (1920-1921) 1929 OU9 Tonga OU9



grade. The wall is 250 feet long, the existing base about 6 feet wide, and the maximum height 5 feet. It extends only across the flat top land, stopping at the top of the two steep banks that descend at either end to the sea. It is composed of rough, undressed pieces of coral stone piled together rather carefully and varying in size from small pieces weighing 4 or 5 pounds to pieces weighing several hundred pounds.

All informants agree that only a few years have elapsed since the wall was nearly complete. It was partly destroyed, beginning in 1910, by the present government to furnish stones for the concrete water reservoirs that were being so extensively installed in Tonga at that time. The original height of the wall is said to have been "1 fathom," which was defined as a sufficient height to prevent a tall man from seeing over. The highest portion of the wall remaining has one vertical surface which does not appear to have been disturbed. It stands at an angle of about 10° from the perpendicular. The stonework is neatly and compactly finished.

The origin of this wall is generally ascribed to a custom whereby the parents of every first-born son in the Makave district carried one stone and added it to the existing pile. No clear purpose for such a practice could be found. It was simply in accordance with an order issued by one of the Tuihafitu chieftains of Makave. One old man discredited this explanation and said that the wall was built by a chieftain named Lolomanaia. He could supply no purpose for such a structure.

## FELETOA DEPRESSION

At Feletoa, Vavau, there is a peculiar symmetrical depression in the earth's surface more than 200 feet in diameter and from 6 to 7 feet in depth at center. Although circular and bowl-like in shape, this depression has the appearance of a natural surface feature, although any natural cause for its existence remains obscure. It is said to have resulted from the following practice. The father of every first-born son in Feletoa went to this spot and struck the earth once with the butt of a large stick of toa (*Casuarina*). The depression and the stick used in producing it shared the name *tukitou*. The accumulative result of these earth poundings is said to be the large depression.

The stories, regarding the Makave fill, the wall Kilikilitefua, and the Feletoa depression, share a decidedly impossible flavor. The absence of any haphazard element in the stone wall seems to contradict the possibility of so casual and gradual a method of construction as that set forth in the narrative. The accurate lines and careful piling of stones suggests not only skilled workmen but a more definite purpose than the story allows. The excellent barrier that the wall afforded between Utuatea and Makave, augmented by its slightly elevated position above any approach from the mainland, suggests

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### 3. Neafu, Vavau.

The remains of the fort at Neafu are still to be seen in places, but are too incomplete for accurate measurements. Mariner (16, p. 188) describes the building, possibly the rebuilding, of these defenses. According to his account, the inner ditch, which was 10 feet deep and 14 feet wide, was nearly completed in a single day and fencing and a second ditch, 10 feet deep and 18 feet wide, on the second day.

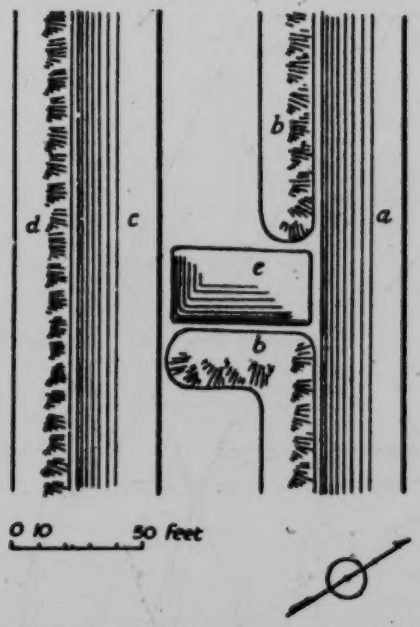


FIGURE 43.—Sketch showing detail of walls and moats on northeast side of fortifications at Feletoa: *a*, outer moat; *b*, outer wall; *c*, second moat; *d*, second wall; *e*, transverse moat between outer and second moat.

### 4. Velata, near the town of Pangai, island of Lifuka, Haapai, (fig. 44).

Although the area of the fort at Velata, including the fortification, is largely under cultivation, the structure is apparent throughout. Two earthen walls with accompanying moats separated by an interval of 33 to 35 yards, concentrically surround a roughly circular area. Four gateways cut directly through all obstructions to the interior of the enclosure.

[764] A large *foitoka* (grave mound) placed directly across the outer wall near the southern gateway has the form of a truncated cone (fig. 44, *f*). It is definitely identified as a grave mound by the *hilihili* pebbles and fine, light colored sand which mark its [312] upper surface. An artificial well near this mound has the typical conical shape. A low oval bank of sand crossing the outer wall of the fortification near the western gateway is said to be the remains of a *foitoka*, but no evidence was found to support the state-

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from Mua to the Tukutonga point east of Nukualofa (p. 18). The first account needs no comment; the second is highly improbable.

About 50 feet southeast of Nukukausiala is a circular, round topped sand mound, 40 feet in base diameter and 3 feet high. It is the burial mound (*faitoka*) where the common wives of the Tui Haatakalaua were buried.

A few yards northeast of this *faitoka* is the low, oval, earthen mound where the house called Falekilikili formerly stood. This house served as a place where the small, black, volcanic pebbles called *kilikili*, used in decorating grave mounds, were sorted and oiled previous to use. Ordinarily this house was tapu to every one. Only after a death in the Tui Haatakalaua family were the old women from among the chieftain's retainers permitted to enter this house and perform the duties associated with it. Close to the north side of Falekilikili was a shallow, funnel-shaped well where the old women washed their hands after oiling the *kilikili* stones.

The inlet from the lagoon is now nothing more than a small mangrove swamp, but anciently it is said to have contained sufficient water to permit large, double-hulled sailing vessels to enter and anchor. Traces of stone work about the edges of this swamp suggest that the channel was at least partly artificial. The stones seen are dressed coral slabs, generally showing only their tops above ground at the swamp edge.

In the center of the inlet, opposite the *faitoka*, there is a small island called Vakaniua. It was at this island that the sailing vessel of the Tui Haatakalaua was moored when at the home port. The island derived its name from the boat, the name being progressively handed down from one boat to its successor. The original boat derived its name from having carried the chieftain Fotofili to the island of Niuafoou, north of the Vavau group.

About 50 yards east of the house Fonuamotu stood the house called Tukumotafa, the dwelling of Lauaki, ranking matapule (non-chiefly official) in the suite of the Tui Haatakalaua. It is now marked by an earthen *paepae* of the usual shape with its major axis about 35 feet long.

About half way between the house of the chieftain and that of his ranking matapule was the chieftain's bathing place, called Malama. It is a funnel-shaped, circular basin about 20 feet in diameter, said originally to have been one "fathom" deep but now not more than 2 feet deep and quite dry. It is not known whether the bath was naturally supplied with water, which would necessarily be brackish, or was filled with rain water from the roofs of the houses, said to have been the source of supply of many of these bathing places.

The cemetery of the Tui Haatakalaua lay inside the ancient shore line. It now consists of four stone-walled burial platforms, collectively called Loamanu, a name derived from the largest of the burial structures. (See p. 58.)

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539 823 825 **322. Mamaha ae tahi he kuo tuunga kiu:** The tide is low for the plover (*Charadrius fulvus*) can stand.

There are a number of phrases for different stages of the outgoing and incoming tide. *Tuunga kiu*, standing for the plover, indicates the time when the sea has receded so far as to leave isolated rocks projecting here and there on the reef, thus affording standing places for the plover. Proverbially used of that which is nearly finished, of which signs of approaching completion are appearing here and there.

539 823 [103] **323. Nofo i lelenga:** Living at cliff; being at the top of the cliff.

*Lelenga* is the name given to a very high bare cliff in Eua, with a sheer drop into the sea. It is possibly, in this connection at all events, a proper name, but Baker gives it as a common noun meaning jeopardy. The expression *nofo i lelenga* has been explained as referring directly to the cliff in Eua, a fall from which would be certain death, and where, owing to the nature of the coast, the chances of recovering the body would be slight. [829] Used generally of being in danger, uncertainty of life. Nowadays frequently heard in Christian worship in reference to the uncertainties of life.

539 823 386 **324. Paepae kae auhia:** Mounded up but washed away.

Perhaps in the first instance refers to the leaves put in the sea to bleach in preparation for mat making. These leaves are anchored by stones put on them. If not this the obvious meaning is still that of something which is piled up but yet washed away by the currents. It is applied to that which one tries to do, to put through, to make fast but cannot.

539 823 **325. Ta ki ao ta ki tua:** Having regard to front, having regard to back.

**Ta ki liku ta ki ao:** Having regard to weather side (of an island), having regard to lee side.

**Ta ki liku ta ki fanga:** Having regard to weather (rocky) side, having regard to beach.

**Ta ki tahi ta ki uta:** Having regard to sea, having regard to land.

[183] These expressions have the same meaning. In reference to persons they denote all-round excellence: used of place they mean everywhere.

## NATURAL FEATURES OF LAND

**326. Fuli ki vanu:** Overturned into chasm.

Such a thing will not appear again: it is finished and done with. So of a thing that is finished, whose usefulness is quite over.

**327. Ka kele a matavai e kele mo muivai:** If the source is muddy the lower waters will also be muddy.

[183] [312] This has its obvious application to things spoiled throughout by corruption at the fountain-head. Although pure Tongan in form and vo-

8: Collocott & Havea M,I-5 (no date) 1922
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cabulary this phrase seems out of place in Tonga, a country almost entirely without running water. 539 823 312

**328. Tafe jino i vai:** Perhaps flowing as a body of water.

Pratt (Grammar and Dictionary of the Samoan language), translates *tafetinoitui:* "to flow in the river bed." It is used in Tongan of that which is manifestly good and may indicate a distinct, clear-flowing, volume of water in contradistinction to scattered streamlets. Except for a few tiny rivulets in Eua the Tongan group is without surface flowing water, and so such an expression would seem to have originated in Eua, or, perhaps more probably, to have been brought from Samoa. [177]

**329. Ta jino-i-vai:** Cutting out body of water.

Water making for itself a channel, and becoming a manifest body of water. Like the preceding, this expression is applied to that which is clean, unsullied, as well as to that which is manifest.

**330. Tuutuu mounga:** Standing (on) mountain. 539 823 554

Applied to one who is out of reach by reason of rank or the protection of those of high rank.

## GEOGRAPHIC LOCATIONS

### TONGATABU AND EUA

[Tongatabu the chief island of the group, and the seat of Government. It is one of the most southerly of the Tongan Islands. On its southeast side is the high and beautiful island of Eua, separated from Tongatabu by a narrow but very deep strait.] 131 133

**331. Hange ko Manaki:** Like Manaki. 539 823

Manaki is a high towering rock in the island of Eua, and is a very prominent feature in the landscape. Used of that which is obvious. (Compare No. 252.)

**332. Hange koe Matafota:** Like Matafota.

Matafota is a place in the sea between Eua and Tongatabu, which has passed into a proverb for its roughness. (See No. 342.)

**333. Koena pe he Tuatoi:** Tuatoi is just over there.

Tuatoi is a place in Eua at a considerable distance from Ohonua, the chief centre of population. Used in an ironic or deceptive way to one who asks how far a place is away. The one inquired of may just point in an offhand way and say, "Oh, Tuatoi is just over there," but when the one who asked comes to walk the distance he will find that he has a long way to go.

8: Collocott & Havea M,I-5 (no date) 1922
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539 516 526 423 571 **420. Teketeke tuakoi:** Pushing one, sitting with his back to mine.

This was sometimes done in sport, two people sitting back to back and pushing against each other. Frequently others would join in helping one or the other side. A proverbial use of this expression does not seem to be known today, but Baker gives: "To push away or remove the landmark of another to increase his own," which evidently pictures two contiguous compounds as sitting back to back.

539 352 484 **421. Hiki moe faliki:** Moving with the floor.

The floor of a Tongan house is formed of dry coconut leaves strewed on the ground and covered with mats. A man in shifting quarters will not usually takes these flooring leaves with him, but this expression indicates a migration so complete that it leaves the ground bare; house, floor, and everything being on the march.

539 829 571 **422. Kama e mea ae api kehe:** Attending to the thing in another's home.

This is much like No. 423, used of one who neglects his own business and attends to that of other people. (See No. 346.)

**423. Kama noa he mea ae api kehe:** To exert oneself for nought in the affairs of another compound.

To use one's energy in labors from which he will get no return; the fruit of his labors will go to those who own the compound.

539 312 [177] [178] [821] **424. Lepa tali ki langi:** Cistern dependent on the sky; a cistern which is filled only by the rain.

The whole matter of water supply and conservation has been modified, of course, by the introduction of European roofing-iron and tanks. Of the cisterns dug formerly by the people some were filled by carrying water from springs; others were filled only by rain. As notable examples of rain-filled cisterns mention is made of natural holes in the rocks near the sea on the islands of Fotuhaa in Haapai, and Niua Foou. We cannot say whether any such expression as this was used in pre-Christian days to express the dependence of man on the gods, but it is used now of the reliance of man on heaven.

539 261 515 **425. Takamilo jiko i tua peito:** Going round defecating outside cook-house.

One should not bring any defilement near the place where his food is prepared, nor should he in any way dishonor his own home. The expression is much like the English proverb about a bird fouling its own nest. (See No. 417.)

539 372 261 **426. Tu mo hokohoka:** Lighting and dabbing, that is, lighting a fire and then dabbing the end of the lighted sticks on the ground to extinguish them; frequently lighting a fire and letting it go out.

Applied to frequently preparing food during the course of one day.

13: Beaglehole & Beaglehole E-5 (1938-1939) 1941
OU9 Tonga OU9
Vavau
Pangai



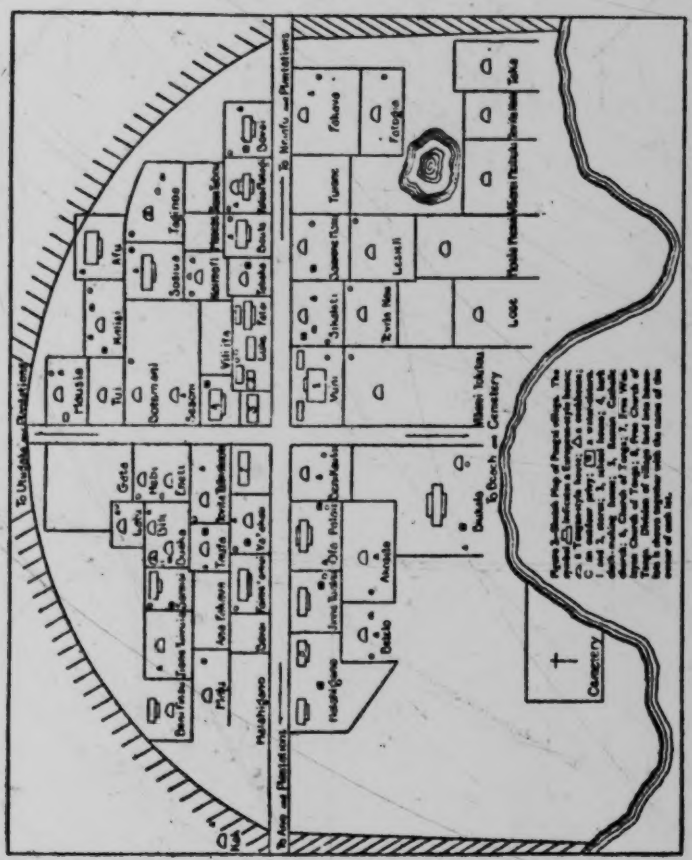

FIG. 2.

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13: Beaglehole & Beaglehole E-5 (1938-1939) 1941
OU9 Tonga OU9
Vavau
Pangai



342 [178] few more of them retain Tongan shape but have frame walls and iron roofs. The old time Tongan house has the advantage of being cool and is fairly easily built. Frame houses are costly to build and hot to live in, but they have the advantage of being generally free from insects and will stand against all but the severest winds. Most of the villagers, if they were [177] free to choose, would build for themselves a European style [185] frame house. It is the ambition of most, indeed, to possess just such a house before they die.

343 514 Practically all the dwelling-houses have an adjacent cook-house. A privy is also found on most household lots. These privies are of the type introduced by Dr. S. M. Lambert as a method of combating hookworm and other tropical 312 diseases. For the whole village there are fourteen concrete cisterns collecting rainwater from the iron roofs of adjacent dwelling-houses to supply the village with water for drinking and domestic purposes. By amicable arrangement householders who do not have a cistern on their lot use the water from the cisterns of close relatives or friends. The cisterns are supposed to be kept covered as a health precaution. Most [164] of them are open. As a consequence, typhoid is by no means an unknown disease.

361 342 There is one dwelling-house only outside the village limits. This is situated on the nearby plantation of its owner, a plantation which borders on the boundary of the village proper. This location of the dwelling-house may [178] well represent a survival of old-time practice when the population lived in the plantations rather than grouped together in a village unit. This grouping of the Tongan 361 565 178 197 commoners in villages has apparently taken place since 1773 and is probably due to a breakdown of central authority, consequent wars and fighting, together with the subsequent influence of the Christian missions and the traders.

361 491 The village is intersected by two main "roads" that lead to the beach, the plantations, to near-by villages. By "road" is meant a twenty-foot wide strip of land that is called a road, but is grass-grown for the most part with a narrow track down the middle wide enough for foot or horse travel. Round the village, these "roads" are thick in mud and hard to pass during the rainy season, even on

15: Thomson G-3 (1886-1900) 1902
OU9 Tonga OU9



669 Finau besieged the place with an army of 5,000
713 men and artillery taken from the captured ship
726 *Port-au-Prince*, but, after an ineffective siege
701 of many months, was obliged to make terms
713 with the enemy. The place lies four miles from Neiafu, on a deep bay communicating with
712 the same harbour. Descending from the modern village which lies just outside the landward defences, we came upon the outer rampart at a spot about two furlongs from the beach and 100 feet above it. We traced the triple line of ditches and earthworks for 200 yards, to a spot near the angle, where they made a semi-circular sweep to enclose a fissure in the earth
712 before trending inland, This rift was the secret
312 of the long resistance to Finau's army. The story runs that, a few years before the siege, a man weeding yams in the gardens above noticed that his dog disappeared and returned with a dripping coat. Fresh water is too rare in Vavau for this to be allowed to pass, and the next day the dog was followed. He vanished into a hole in the coral rock, and after several minutes, returned dripping as before.

Torches were procured and a man scrambled down. The passage gradually widened until, at a depth of forty or fifty feet, it became a

15: Thomson G-3 (1886-1900) 1902
OU9 Tonga OU9



large cave full of water of unknown depth. It was this discovery that led to the choice of Feletoa as the site for the fortress that was to contain the entire population of the island. We explored the cave, and found that the water was clear, but slightly brackish. Probably it rises and falls with the tide, and the whole island, like Niué, contains similar reservoirs of fresh water beneath its crust. Mariner says that Finau had the ramparts levelled with the ground, but, to judge by the works still remaining, his commands must have been but grudgingly obeyed, for it would not take much to put the place into a state of defence again.

Surveying the fort, even in its dismantled and overgrown condition, we could well believe that it had a most imposing appearance. The land-locked inlet, with its vista of hazy islands to seaward and its brilliant reflections, broken here and there by light puffs of wind, must have been a fit setting for the lofty triple rampart alive with warriors in their war-harness. Of their Homeric deeds in the great siege you may read in the pages of Dr. Martin, who, if he wrote no epic, contrived at least to lose nothing of the romance in William Mariner's story.

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21: Simkin U-5 (no date) 1945 0U9 Tonga 0U9



free education, free health services and traditional responsibilities for mutual aid makes an effective and long-established system of social security.

## Natural Heritage

The hundred and fifty-odd islands of the Kingdom of Tonga are scattered over a rectangle of the Pacific extending four hundred miles from north to south, their centre of gravity being near 20°S 173°W. Although they are spread over so much ocean their total area is less than 270 square miles, and all but thirty-six of them are either too small or too volcanic to be settled (Fig. 1).

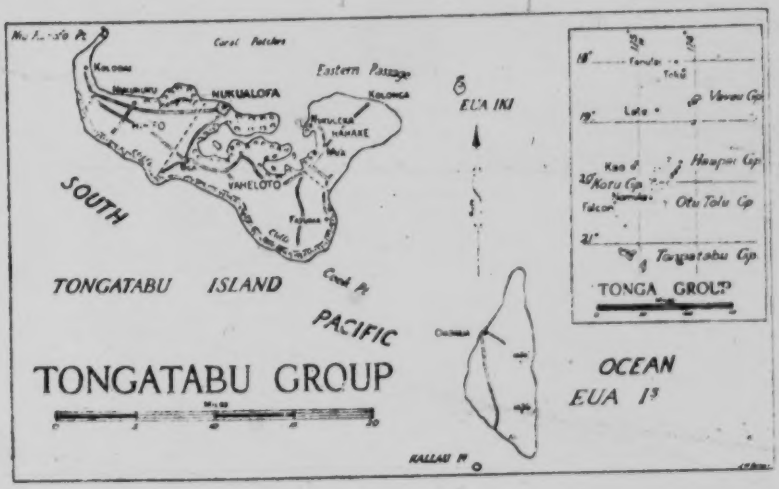


*Fig. 1*

Geologically they consist of two chains: a volcanic chain lying to the west of a line from Ata to Tafahi, and an eastern chain of coralline islands encircled by reefs. Despite their volcanic origin none of these islands reaches higher than Kao (which has a peak of 3,380 feet) and few of them have hills worth the name. Lakes and streams are equally scarce. Tofua and Niua Fo'ou each has a fair-sized lake and there are a number of creeks on Eua, but the other islands have to rely entirely upon wells and the storage of rain for their water. One reason for this is that the soil is extremely porous, being a shallow layer of red volcanic ash, devoid of quartz, but containing broken-down particles of limestone. It is initially very fertile, but does not carry crops for long

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9

## CHAPTER V.

000 **Absence of running streams—Underground stream in Feletoa—Capabilities of Vavau for affording an abundant supply of water—Native wells and bathing-places—Number of fair and rainy days—General character of the climate—Hurricanes—Earthquakes—Saline lake in Nomuka—Its peculiar fish and preservative qualities—The Tridacna gigas—Shells and Shell-fish—Varieties of fish, and methods of taking them—Freedom from venomous snakes—The Tukuhali, or sea-snake—Indigenous and foreign animals—Birds—Insects—Native methods of escaping the musquitoes.**

133 Allusion has been made to the remarkable absence of running streams, or rivers, in the 312 Friendly Islands. There are only two very insignificant exceptions throughout the whole group. These occur at Vavau and Eua. That at Vavau is an underground stream, situated near Feletoa. It is reached, with difficulty, by descending a considerable depth into a natural cavern, that can only be explored by the aid of flambeaux. In seasons of extreme drought, the natives, and the Missionaries, have been accustomed to supply themselves from this source. The water is exceedingly pure, and of most delicious coolness. Its underground course cannot be traced; nor has it any visible outlet to the sea. There are, however, various spots around the shores of Vavau, where fresh water percolates through the rocks; and where, in a few instances, it flows in slender 312 streams. Proposals have been often made to obtain, by blasting, a free and pure supply, not only for the benefit of the people themselves, but also for the foreign shipping visiting the island.

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9



Against this the natives seem to have a strange aversion, and they have, hitherto, resisted or been indifferent to all applications for that purpose. No one thing, of its kind, could confer a greater boon upon foreign visitors, or could prove a stronger inducement for shipping to call, than that of securing an abundant and ready supply of good water. At present, vessels visiting Vavau have to fill their water-casks at Falevai, a place about eight miles distant from the ordinary anchorage; where, in addition to the trouble and labour of rafting to and from such a distance, the water is obtained by the slow process of baling from a well. In the immediate neighbourhood of Talau, where vessels usually anchor, there are places in the rocks, which, if blasted, would, probably yield an abundant and flowing supply. It is, therefore, to be hoped that the enlightened policy of King George will lead him to overrule the prejudices of his people, and to provide Vavau with this essential requisite of a good harbour. So long as such a provision is neglected, the truly splendid harbour of that island, of which we shall have more to say in another place, will remain comparatively unknown and unvisited.

Perhaps, as the natives themselves use but very little water, either for drinking or any other purposes, this fact may account in part for their great apathy. They are content with having a very few wells, dug in convenient localities, which afford a sufficient supply, for their household requirements, of a very hard and brackish water. It answers for but few purposes in European cookery. In the vicinity of the sea-shore, these wells, or rather water-pits, are dug of much larger dimensions, and

22: West M-3 (1846-1855) 1865 OU9 Tonga OU9



312 [515] they serve as public bathing-places. Where two separate localities for men and women cannot be obtained, each sex resorts in turn to the same bathing-place, at different and appointed periods of the day. The water of all these wells and ponds is simply the sea-water filtrated through the sand and coral rocks; and hence, it is largely impregnated with lime.

For soft water, the Mission families, and other foreigners, depend entirely upon what is collected from the clouds, either in tanks or in clay pits, called by the natives *lebas*. In the construction of these pits, the people are extremely clever; but they soon crack under the intense heat of the vertical sun, unless tended with great care, and most effectually covered over with thick layers of cocoa-nut leaves.

797 It is to be regretted that no regular meteorological registers have ever been kept by the Missionaries residing in the Tonguese islands. The information thus obtained is of great public utility, and we think it would be no abuse, but rather a legitimate employment, of Missionary funds, to supply every central station with a set of the most approved modern barometrical and meteorological instruments. The daily observations necessary need interfere in no degree whatever with the higher, and spiritual duties of the Missionary; while the value of the information would be an ample remuneration for the small expenditure of 000 money and time. The Missionaries of the London Missionary Society have done good service, in this department of science, by their carefully prepared Meteorological Registers, published from the Samoan Islands. It appears that in those islands there are, on an

42: Walsh K-4,5 (no date) 1970 OU9 Tonga OU9



George Tupou. The new laws concerning relations between chief and commoner gave the ordinary Tongan much more independence and freedom of movement; while other laws obliged chiefs to allocate land to their followers which in effect usually resulted in the allocation of town and country land. The distinction between *'api kolo*, the place to reside, and *'api tukuhau*, the place to cultivate, was thus sharpened by legal definition, but it seems probable that while the laws encouraged the new form of settlement in some places, in others they merely confirmed what had become an established practice. In the 1920s Tungi, the husband of the late Queen Salote, sought to encourage people on his *tofi'a* or estate to return to dispersed living. By forfeiting their right to an *'api kolo*, they could obtain 12½ acres of *'api tukuhau* instead of the customary 8½ acres. This venture was not very successful and in three of the four villages where it was encouraged, most of the people have now returned to the village centre.

## THE DISTRIBUTION OF POPULATION

There is evidence to suppose that settlement was more widespread than it is today, although the populations involved were often small. The volcanic islands have apparently always been less densely settled than the coral islands of the group. They are too small to provide permanent fresh water streams, much of their area is too steep for cultivation, landing places are poor, and occasional volcanic eruptions are a further deterrent to settlement. Their isolation, however, heightened their attraction in times of civil disturbance and most were occupied until the mid-nineteenth century. Only Niuafo'ou and Niuatoputapu continued to support relatively high populations into this century, and the former was evacuated following an eruption in 1946. As with earlier resettlements, an attempt was made to maintain old social groupings and nine Niuafo'ou villages were re-established in 'Eua.[10]

The coral islands also lack fresh water but the habitable area is often more extensive, the soils of many have been enriched by ash showers, the surrounding reefs make for good fishing, and communications are easier. There are, however, some notable exceptions. Uoleva, for instance, always appears to have been uninhabited. Its sandy loams are unsuitable for growing yam and, although visited by people from nearby Lifuka and farmed to some extent, there is no record of

[10] Not all resettled in 'Eua; about half stayed in Tongatapu. Of earlier settled islands, 'Ata is reported to have had a population of 200, consisting of refugees from several islands until Peruvian raiders forced its evacuation in the 1860s. Its inhabitants were resettled in a new village called Ha'atua in 'Eua. Refugees from Tongatapu resided on Toku and farmed the more fertile nearby Fonualei until an eruption in 1846 led missionaries to persuade its inhabitants to move to Utulei in Vava'u. Similarly Late, Kao and Tofua were all inhabited prior to the mid 1860s.

162
161 The inhabited islands comprise 238.81 square miles--almost
131 90% of the total land area. Thus, most of the islands of
133 Tonga are little more than elevated reefs. The total land area of the country is under 270 square miles, and all but seven of the islands are less than five square miles in area.

Geologically, Tonga is made up of two approximately parallel lines of islands, running north-east to south-west. Those on the western ridge, some ten in number, are of volcanic origin. Nearly all of these islands have steep rocky surfaces and high sea-cliffs, making landing difficult and yielding little land that is suitable for habitation or cultivation. From five to fifteen miles east of the volcanic ridge runs a line of coralline islands. These consist for the most part of atolls set among reefs, but the two largest islands, Tongatapu and Vava'u--which together comprise half the total land area of Tonga--are sloping limestone platforms. 'Eua and Niuatoputapu islands are another variation on the two main types, in that they are volcanic in origin with a limestone cover. They are the only Tongan islands
312 with natural running water. For the most part, the water supply on the other islands is provided by rainfall. During dry spells, recourse is made to the harsh but potable water available from wells dug through the limestone.

131 The coralline islands of Tonga form three clusters (see Map 2). The Tongatapu Group in the south consists of

[TEXT CONTINUED ON PAGE 37]

342 Main houses are of various styles, with three basic types that range from traditional to modern according to the material used in construction. First, there is the oval or rectangular single-roomed house that is walled and thatched with mats of plaited coconut-leaf, ranging in size from about 10 x 15 feet to more than five times that large. Next, there are houses made of wood, raised up to three feet off the ground on wooden or concrete stilts, and none smaller than about 20 x 20 feet. And finally there are houses made of concrete blocks, the largest and most modern of all. All concrete houses and most wooden houses are roofed with sheets of corrugated iron. Many have a roof gutter leading to a large drum in which rainwater is stored.

312 Only three houses in Motulahi have an indoor toilet and
544 bathroom with running water. Two of these belong to two
555 of the richest men in the village; the third is the
177 otherwise traditional-style house of the U.S. Peace-Corps
648 worker who teaches at one of the local schools. Besides these houses, there are a few that have water from an outside tap on the *'api*. People who do not have piped water make use of their neighbors' taps or the few public taps in the village. There are also shallow wells on a number of *'api*. (Well water is used for laundry and other cleaning purposes but is recognized as being not safe to

373 drink.) A number of houses have electricity, used mainly for lighting, but most people make do with a kerosene lantern or a Coleman lamp.

lantern or a Coleman lamp.

In addition to town allotments, the residential sector of the village includes three churches, a government-owned concrete water tank for collecting rainwater, and a malae or 'village green'. The malae is the large open space between the noble's house and the main road. Except for the churches, the only non-residential structures in the village are six privately-owned shops (each set on a corner of the owner's 'api), four privately-owned sheds, and an open-sided thatched structure at the side of the malae, which serves as a Baby Clinic when the visiting nurse makes her bi-weekly visit. Motulahi is also served by four schools and three burial sites or cemetries, all of which lie adjacent to or near the boundary of the residential sector. In its lack of offices or coffee-shops, Motulahi is typical of Tongan villages. The many churches and nearby schools are also typical.

## History of Settlement at Motulahi

The following data, which portray the history of settlement at Motulahi, serve to flesh out the national statistics relating to processes of migration to Tongatapu. These materials also indicate something of the operation of the system of land tenure and particularly how operation of the system is an integral part of the relationship between the tofia owner and the people of his village.

46: Decktor Korn E-5 (1969-1970) 1978 OU9 Tonga OU9
Tongatapu
Motulahi



associates.[11] That being the case, when a change of residence or of denominational affiliation occurs in circumstances other than marriage, some new strategy of achievement may reasonably be inferred.

## Voluntary Associations

The data regarding shifting membership in households, fāmili, and congregations suggest that Tongan villagers avoid engaging in arrangements that commit them to sustained cooperation over a long period of time. This appears to be borne out by the following material. A few years before I came to Tonga, money had been raised in Motulahi to provide a piped deep-well water system for the village, whereas before that people had relied exclusively on stored rain-water and shallow open wells. I found, however, that the piped water system worked only irregularly, owing to ineffective arrangements for priming the pump and clearing blocked pipes. According to my notes, on January 26th 1970 tap water was available in Motulahi for the first time since New Year's Day. Nine days after that, the piped water supply quit again for two

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11 In a paper on the phenomenon of denominational diversity in Tonga (Decktor Korn 1977), I argue that the present success of the Mormon Church in attracting new adherents follows the pattern of other churches in previous years, and is best understood as an instance of Tongans' readiness to welcome the possibility of new stratagems.

312 days. It worked on and off for a few months and then in
365 mid-April there was another three-week period in which there was no piped water in the village. During such periods people use the rain water that has accumulated in storage drums and in the village water tank; indeed, it is my impression that depletion of the rain-water is what motivates whichever person takes the initiative
312 to re-activate the tap-water system. There are statutory
624 regulations that provide for the establishment of a Water
365 Committee in each village to see to collecting the money and overseeing the labor necessary for keeping the village water system in continual working order. In most villages, however, the committees exist in name only, and this is also true in Motulahi.

571 It might be inferred from these data that Tongan villagers are somehow incapable of working for the common good or that they are unwilling to cooperate beyond their own kin-groups and congregations. However, the following
872 data will serve as a counter-example. The government
658 primary school in Motulahi has a reputation as a fine school and there has been considerable growth in the student
872 population over the years. By 1969 there was beginning to
476 be a severe problem of insufficient classrooms and classes doubling up in the same room. Finally, in October 1969, after raising half the costs of the building materials,

54: Cook G,T-5 (1777) 1967 OU9 Tonga OU9



634 lear[n]t by Omai, was that all the people both young and old were to
648 look upon me as a friend who was come to remain with them a few
565 days, that they were not to steal or molest me in any thing, that they
537 were to bring hogs, fowls, fruit &c[a] to the ships where they would receive in exchange such and such things. Soon after Tapah had done haranguing the people, Fenough left us and Tapah gave me to understand it necessary I should make a present to the Chief of the island whose name was *Earoupa*,[1] I was not unprepared and made him a present that far exceeded his expectation, this brought upon me two Cheifs of other isles and lastly Tapah himself. When Feenough returned which was immidiately after I had made the last present, he pretended to be angry with Tapah for suffering me to give away so much, but I looked upon this to be all a feness. The Cheif again took his seat and ordered Earoupa to set by him and to harangue the people as Tapah had done, the subject was chiefly dictated by Fee-
634 nough and was to the same effect as the other. These Ceremonies
648 being over, the Cheif at my request conducted me to three standing pools of fresh water as he was pleased to call it, in one indeed the
[312] water was tolerable and not inconvenient to come at.[2] After Viewing
[431] the Water we returned to our former station, where I found a baked hog and some yams all piping hot put up for me to take on board. I invited the chief and his friend to pertake of it they excepted my invitation and we all imbarked for the Ship, but none but the chief sat
[431] down to table. After dinner I conducted them ashore and before I
[434] came on board the Chief gave me a fine large Turtle and a quantity of yams, and we got by barter along side the Ship about twenty small hogs besides fruit and roots. I was told that soon after we went ashore
609 in the Morning, a man came off and ordered every one of the Natives
796 a shore, probably it was to be present at the ceremony for that was no sooner over than they returned.

634 SUNDAY 18*th*. Early in the Morning Omai, who generally slept
648 ashore, and Feenough came on board. After some time I accompaned them ashore and was conducted to the same place as I was at the day before, where a large concourse of people were assembled, I guess'd some thing or another was going to be done but could not till what
[431] nor could Omai inform me. I had not sit long before near a hundred
[651] people came laden with Yams, Bread fruit, Plantain Cocoanuts and

[1] Tongans cannot explain this name, or give an equivalent: possibly Alupe or Tealupe. Tealupe was the *matapule* of Uiha, close to Lifuka.

[2] There is still a well at Koulo, once merely a deep pond about four feet across, now with a concrete wall around it and a cover on top; its water is regarded as very good, at least for washing. This could very well have been the 'standing pool' Cook refers to, as Koulo would have been an easy stroll from the northern end of the bay.

54: Cook G,T-5 (1777) 1967 OU9 Tonga OU9



122 before us, I hauled into a bay which lays between the South end of
133 Lefooga and the North end of Ooleva, and there anchored in 17 fathom water, the bottom sand with here and there rock. The Discovery did not get to an anchor till sunset, she touched upon one of the Shoals, but backed off again without receiving any damage.

312 As soon as we had anchored I sent Mr Bligh to Sound the bay in which we lay and my self accompaned by Mr Gore, landed on the Southe[r]n part of Lefooga to examine the Country and look for fresh water, not that we wanted any having filled all our casks at the last place, but had been told that at this part of the island was some better than any we had met with. This will not be the only time I shall have to remark that these people do not know what good Water is. We were conducted to two wells and found the Water bad in both
349 and the Natives told us they had no better.[1] Near the South end of
223 the Island and on the West side, we met with a artificial Mount, that had been raised in remote times, as large trees &c[a] were growing upon it. I judged it to be about Forty feet high and the Diameter of its summit measured fifty.[2] At the foot of this Mount stood a stone which must have been hewn out of Coral rock, it was 4 feet broad 2½ thick and 14 high, and we were told by the Natives present that not
349 above half its length was above ground. They called it Tangata
211 (Man) or Arekee (King) and told us that it was set up and the Mount raised by some of their fore Fathers in memory of one of their Kings,
122 but how long sence they could not tell.[3] Night coming on we returned
133 on board, and at the same time Mr Bligh from sounding the bay, in which he found from 14 to 20 fathoms water, the bottom for the most

[1] Natives of coral islands did not feel the need of water for drinking, and what they had was good enough for fresh-water washing. Hence the difference of opinion between Tongans and Cook about what was 'good' water. Cook's men followed the native example,
[272] e.g. with the muddy and brackish fluid at Nomuka—'but the milk of the cocoanuts in a great mesure made up for the badness of it; as they were so plentifull that we seldom drank any thing else'.—Gilbert.

[2] 'In many of our walks about this Island we saw more numerous & extensive plantations than at Anamocka, & in better order; yet towards the sea side particularly to the Eastward, the country is still waste owing perhaps to its being a sandy soil; an artificial mount rais'd to a considerable height with an arbour of trees surrounding a green plot attract'd our notice; we were busy in forming conjectures as to the use of this spot, when we learnt that it was only a decoy for Pidgeons, being inticed thither by its shade & coolness, & likely by the natives putting some thing they like, whilst they hide themselves among the shrubs, & with a net throw over & catch them.'—King, 21 May. This artificial mount has now crumbled away, and Lifuka is virtually flat from one end to the other. *Siahuluga* was the name given to the mount where wild pigeons (*lupe*) were snared. As Uoleva, the next island south, had a large number of pigeon mounds, and seems to have been a favourite spot for the chiefly sport, this mound may quite likely have belonged to the same series.

[3] The great stone no longer exists, except possibly underground. There are much smaller monumental stones extant, some built into *langi*, and there are said to be two monoliths as far away from Lifuka as Niuatoputapu, important enough to have names. But the only familiar thing of the sort is the great trilithon called Ha'amonga 'a Maui, at Hahake near Kolonga on Tongatapu, which many date from as early as the eleventh century.

54: Cook G,T-5 (1777) 1967 OU9 Tonga OU9



122 with beating about amongst the islands and shoals as they were and determined to get to an anchor some where or a nother if possible.
[133] While the boat was absent, we attempted to turn the Ships through the Channel, between the Sandy isle and the reef of Ogodoo, in expectation of finding a moderate dept[h] of Water behind them to anchor in, but meeting with a Tide or Current against us were obliged to desist and anchor in 50 f^m water with the Sandy isle
[648] bearing EBN one mile distant. We lay here till the 4^th during this
[649] time we were several times visited by Fattafee the King, Toobow-
[499] eitoa, and people from the neighbouring island[s] came off to trade notwithstanding it blew very fresh most of the time. The Master was sent to sound the Channels between the islands to the Eastward and I landed on Ogodoo to examine the island and take a View of the
134 Shoals or reefs about it. I walked all over it, the north part is low
[193] land, the soil composed of Sand and Mould. The South end is ele-
311 vated and the soil a red sandy clay without a stone, every part is
[312] cultivated and there are some pools of dirty Water on the low ground and all of them more or less brackish.

Wed. 4 On the 4^th at 7 AM we wieghed with a fresh gale at ESE and stood
Thur. 5 away for Anamocka where we anchored the next Morning nearly in
122 the same place where we lay before. I landed soon after and found
499 the Inhabitants very busy in their plantations diging up yams to
241 bring to Market, they were now in the greatest perfection and we
199 procured a good quantity for pieces of iron. Before I returned on board I visited the several places where Mellon seeds & plants had been planted and had the Mortification to find that the most of them were distroyed by a small ant,[1] but [the] Pine-aple plants
Frid. 6 I had planted were in a flourishing state. About noon the next day
164 Feenough arrived from Vaughwaugh he told us that several Canoes
122 laden with hogs &c^a that sailed with him from the island were lost in the late blowing weather and every soul in them perished; but as this melancholy tale seemed not to affect any one of the Indians, I did not beleive it; yet it might be, for it had blown hard for these parts, in so much that the King and others at Ogodoo durst not venture to Sea when we did, but desired I would wait for them at Anamocka which was the reason of my anchoring there the second
Sat. 7 time. The following Morning the King and all those who had been
643 wind bound with him arrived, I was at this time a shore with Fee-
648 nough and left him to visit the other; who I found seting with a few
634 people before him, but as several came to pay their court to him

[136] [1] The ant in Tonga is called *lo*; but there are more than one species, so that it is impossible to identify the criminal.

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man who had the management of it. A Cup was carri'd to the Kings Brother, with which and his victuals he retired, as did some others also, and the reason was they could neither eat nor drink before the King; but there were others of a much inferior rank who did both.[1] Soon after the most of them retired, each carrying with them what victuals he or she had not eat. It is necessary to observe that not one 4th part of the Company had either Victuals or drink and some had one and not the other: those who had the Victuals I took to be of the Kings household. The Servants who served out the Victuals and Cava always delivered it out of their hand siting, not only to the King but to every other person. And altho this was the first time of our landing, and a great many people present who had never seen us before yet no one was troublesome, but the greatest good order was Observed throughout the whole. Before I went on board I was shewed some pools or holes of fresh Water as they were pleased to call it; the Water in one was indeed tolerable but it was some distance in land and but little of it. The next morning I went over to the island of *Pangymaudoo*,[2] near which we lay, to look for Water being told there was some there; I was conducted to a small Pool that was tolerable and had it cleaned out and here it was we watered the Ships. As I intended to make some stay here I got all the Cattle a shore,[3] a party of Marines with the officer for a guard, set up the observatory and Mr King resided a shore to attend the observations and superintend the several works carrying on there, for I had the

Wed. 11

young persons who had clean mouths and good teeth were allowed to take part in the chewing. This was not a prolonged process, and the masticated root was kept dry. What Cook calls 'brewing' was really infusing. He was not always put off by the sight of the process. 'Capt[n] Cook often drank of it, holding it as an argument that seamen should eat & drink every thing that came in their way, some of our Officers follow'd y[e] good example set them, I must acknowledge either my want of taste or politeness for I could by no means be brought to taste it in a mixture, contenting myself with taking it in y[e] manner of y[e] slaves, the least piece put in y[e] mouth fills it with an instant glowing heat, it is nearest in taste to y[e] horse-radish of any thing I can recollect.'—Williamson, 17 July.

[1] '. . . what at first appears singular, is, that although neither his brother nor any great chiefs can eat before him, yet his own attendants do & sometimes with him, this cannot be suppos'd to degrade his dignity & lessen it, as they are not exalted sufficiently to claim any libertys he does not chuse to grant.'—King, 7 June. The reason for this exception to the general eating rule was probably that those who were favoured were, as Cook says below, 'of the Kings household'—that is, they were *matapule*, and also *matapule* of foreign origin. The inconvenience of the eating *tapu*, and other varieties of *tapu*, carried to an extreme of consistency with personal attendants, might well be very great, but one who was rankless in any Tongan connection was exempt. Thus Hoakai (Samoan Soakai?) 'a matapule to the Tui Tonga, was privileged to eat with the Tui Tonga, a thing which no Tongan might do' (Gifford, p. 141).

[2] Pangaimotu. It is a small island, less than a square mile in area and 15 feet high, 2¼ miles north-east of Nuku'alofa.

[3] '. . . they were much surpriad at our Cattle and called them Boaha,la,hi; which signifies, large Hogs. . . .'—Gilbert. The Tongan expression is *puaka lahi*. I have been told that the Tongans still refer to cattle and other livestock as 'Cook's pigs'.

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tops of the Mounts round the houses, there were a few rude Images of the human figure, of different ages. We were told they were there as monuments to the Memory of the dead and not the representation of any Deity.[1] Such monuments they seldom raise for these seemed to be very old. In one of the house[s] was the Carved head of an Otaheite Canoe which had been driven a shore on their coast and deposited here. After dinner, or rather after we had refreshed our selves on what we carried with us, some of us took a Walk into the Country making a pretty large circuit attended by one of the Kings Ministers,[2] our train was not great as he would not suffer the rabble to follow us, he also obliged all those whom we met to sit down till we pass'd a respect due only to their Kings. We found by far the greatest part of the Country cultivated and planted with one kind of production or a nother and the most of these plantations were fenced round. Some old Plantations lay uncultivated or in fallow, and there were places that had never been touched but lay in a state of Nature but even these places were usefull in affording them timber &c[a] with which they were generally covered. We met with several large uninhabited house[s] which we were told belonged to the King or the Lord of the Manor;[3] there were many publick and well beaten roads and as many foot paths leading to every part of the island. The roads were good and the Country level consequently traveling was easy. On the most elevated parts, we met with coral rock close to the surface, perforated and cut into all those inequalities we see them in the wash of the sea, yet these very rocks with hardly any soil upon them were covered with a luxuriant vegetation. We were conducted to several little pools and some springs of Water, but the most of them were either stinking or brackish tho recommended as excellent.[4] The

[1] These three mounts seem to have been the great *langi*, called Tuoteau, Katoa and Tuofefafa, with a smaller fourth one in front, unnoticed by Cook, called Tauatonga. Cook does not mention stone-work, apart from the wall, so the stone of the *langi* may have been heaped over with earth. These lay to the north of the eastern side of the great *mala'e*, and in front of them was a smaller *mala'e*. Within them were the stone vaults or burial chambers. The houses, *fakatolia*, were set up to protect the central part of the covering of fine black volcanic pebbles, called *kilikili*, which marked a vault. The information about the 'rude Images' being 'monuments' or commemorative figures was probably correctly gathered: cf. II, p. 251. The Tongans did not carve representations of their gods.

[2] No doubt a *matapule*, one of the non-chiefly but important officials on whom administration so much depended, attendant on a chief and sometimes his spokesman.

[3] By 'Lord of the Manor' Cook presumably means an '*eiki*, a great chief or 'noble', whose power, under that of the Tu'i Tonga, was territorial, as well as extending to the persons of the common people.

[4] Williamson, 20 June, provides a dissenting opinion: '. . . I have great reason to think that fresh water might be had by sinking a well at some distance from the lagoon, & am the more confirmed in this opinion from the many wells of delightful water, which we met with during our prerigrinations, some not less than thirty feet deep, & made extremely neat & clean.'

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312 first were mostly in land and the latter by the shore of the Lagoon and for the most part below high water mark, so that to have the water tolerable it must be taken up at low water.

648 When we returned from our walk, which was not till the dusk of
262 the evening, our supper was ready, it consisted of a baked hog some
513 fish and yams all excellent well cooked after their own method. As there was nothing to amuse us after supper we followed the Custom of the Country and laid down to Sleep, our beds was a large piece of Cloth spread on the floor. The King slept in the same house as well
521 as several others. Long before day break they rose and sat chating by Moon light till it was day light; the conversation, as might well be expected, turned wholy on us, the King entertaining the Company
Frid. 27 with an account of what he had seen. As soon as it was light they all
512 went away, some one way and some a nother, but it was not long before they returned and with them several more. They now began
648 to make a bowl of Cava at which I left them to pay a Visit to Too-
276 bough Captain Furneaux's friend, who had a house hard by, which for size and neatness was exceeded by few in the place. As I had left the others so I found here, a company preparing a Morning draught.
[431] This Chief made me a present of a living hog, a baked one, a quantity of yams and a large piece of Cloth.

276 When I returned to the King I found the company drinking the second bowl of Cava. When it was out the King told Omai he was
765 going to perform a Mourning ceremony for a Son which had been
643 dead some time and desired we would acompany him. We were glad of the oppertunity expecting to see some thing new or Curious.
[292] The first thing the Chief did was to step out of the house, attended by two Women, and put on a new sute of Cloathes, or piece of Cloth, and over it an old ragged mat that might have served his great grand Father on some such like occasion: his Servants or those who attended him were all dressed in the same manner, excepting none of
[824] them having quite so ragged a Mat round them as their master.[1] Thus equiped we marched off preceded by about eight or ten persons all dressed in the same manner and with each a small green branch about his neck. The King held his in his hand till we drew near the place of rendezvouse when he tied it about his neck also. Thus we entered a small inclosure, in which was a small neat house and one
[824] man seting before it. As they entered they pulled off the green branch from round their necks and threw them away. After the King was seated the others seated them selves in the usual way before him;

[1] This was the *ta'ovala*, still worn as a sort of sash-apron; the raggedness was not for normal wear, but a sign of mourning.

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afterwards more came droping in to the number of a hundred or upwards, mostly old men and all dressed as above discribed. As soon as they were all come in a large root of Cava, brought by one of the King's Servants was produced, and a bowl which held at least four or five gallons; several person went to chewing the root and this bowl was made brim full of the liquor, and several Cups were made of the Plantain leafe while it was preparing.

The first Cup was given to the King which he ordered to be given to another, the Second was brought him which he drank and the third was offered me. Afterwards as each Cup was fill'd the person who filled it asked who was to have it, and a nother named the person and to that person it was carried; thus they continued till the bowl was emptied which was before half the Company was served, yet no one seemed dissatisfied. As the bowl grew low the person who had the desposal of the liquor seemed rather at a loss to whom he should send the Cups of liquor to and frequently consulted those who sat near him. About half a dozen cups served the whole company, each as it was emptied was thrown down upon the ground where the waiters picked up and carried it to be filled again. They sat as usual with a great deal of gravity and hardly spoke to each other the whole time. All this time did we wait with some impatience, in expectation of every minute seeing the Mourning ceremony begin; when soon after the Cava was drank out, to our great surprise and disapointment they all rose up and dispersed and the King told us he was ready to attend us to the Ships. If this was a Mourning ceremony it was a strange one, perhaps it was the second, third or fourth Mourning, or what was not very uncommon Omai might have misunderstood them; for excepting the ceremony of the green branch, there was nothing in this meeting but what we saw every day.[1] But be what it would as soon as it was over we set out to return to the Ship. As we rowed down the Lagoon or inlet we met with two canoes coming in from fishing, the Chief ordered them to be called along side and took from them every fish and shell they had got, he afterward brought to two others and searched them but they had nothing; why this was done I cannot say as we had plenty of Victuals in the boat; some of this fish he after wards gave to me and some his servants sold on board the ship. As we proceeded down the Inlet we overtook a large sailing Canoe, every person in her that were upon their legs when we came up with her sat down till we were past, even the Man who steered, altho he could not manage the helm in any other position but standing. Having been informed that there was some good Water on

[1] It was in fact the mourning kava ceremony.

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312 [Onnevy][1] an island which lays before the Inlet and on the north side of the Eastern Channel, I landed on the island in order to taste it as it had been greatly extoled by all on whom we enquired, but we found it as brakish as most we had met with; it was in little holes which had been dug in the sand for the purpose about a hundred yards from the sea, and was perhaps the worse for being at this time 193 high-water. After leaving this island, took a View of a curious Coral 137 rock, which was elevated about 10 or 12 feet above the surface of the Sea that surrounded it, its base was not above one third the circumference if its sumit, which last I judged to be about one hundred feet; there grew upon it the Wharra or Palm[2] and Etoa tree[3] 648 and a species of firn and grass. When we got on board I found every 685 thing had been quiet during my absence, not a theft had been com- 634 mited of which Feenough who undertook the Management of his Countrymen piqued himself not a little; this shews what power the Chiefs have when they have will to execute it, but this we were seldom to expect sence whatever was stolen from us generally if not 649 always went to them. This good order was of short duration for the Sat. 28 next day, six or eight Indians assulted some of our people who were sawing plank, they were fired upon by the Sentry and one was supposed to be wounded, and three others were taken, these I kept confined till night and did not then dismiss them without punishment, after this they behaved with a little more circumspection and gave us much less trouble. This change was certainly occasioned by the Man being wounded, for before they had only seen the effect of fire arms but now they had felt it. At first I thought the man had only been wounded with small shot; the repeated insolence of the Natives had induced me to load the Sentries Muskets with small shot and authorized them to fire on particular occasions; but M[r] King and D[r] Anderson being in the Country, met with this man, and found he was wounded with a Musket ball;[4] the wound was left to Nature, which on many occasions is the best surgeon, it was not dangerous and the man was in a fair way of recovering. I could never find out how this Musket came to be charged with ball, there were enough ready to 122 swear that it was only charged with small shot.

JULY Wed. 2 Nothing of note happened till the 2[nd] of July, when on looking at the Micrometer belonging to the Board of Longitude, found some of

[1] 'Onevai. This name is substituted (by King?) for a deleted 'Pangimodoo', in writing which Cook obviously made a slip.

[2] Fala (Tahitian *fara*) or pandanus. It was often called the screw-palm or screw-pine, though the origin of 'screw' in this sense is unknown; and 'screw' is probably Cook's missing word.

[3] Toa, *Casuarina equisetifolia*.

[4] See King, p. 912, n. below.

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situation in which I did not think them safe. We continued to ply to windward between the two tides without either gaining or losing an Inch till near high water, when by a favourable slant, we got into the Eastern tide influance and where we expected to find the Ebb to run strong to the Eastward in our favour, but it proved so inconsiderable that at any other time it would not have been noticed. This informed us that most of the Water which flows into the Lagoon comes in from the NW and returns the same way. About 5 PM finding we could not get to sea before it was dark I came to an anchor under the shore of Tongatabu in 47 fathom water, and about two Cables length from the reef which lays along the shore of the island. The Discovery droped anchor under our Stern, but before the Anchor took hold She drove off the bank and did not recover it till after Midnight.

Frid. 11 We remained at this station till 11 oclock the next day, when we weighed and plyed to the Eastward, but it was 10 PM before we weathered the East end of the island and were enabled to stretch away for Midleburg or *Ea oo we*[1] (as it is called by the Inhabitants)

Sat. 12 where we anchored at 8 oclock the next Morning in 40 fathom water over a bottom of sand interspersed with Coral rocks; the extreams of the island extending from N [40°] E to S [22°] W, the high land S 45° E and Tongatabu extending from N [70°] W to N [19°] W distant from the shore about half a mile. We had no sooner anchored than Taoofa the Chief and several other made us a visit and seemed to rejoice much at our coming: this Taoofa was my Tayo when I was here last voyage, consequently we were no strangers to each other.[2] Soon after I went a shore with him to look for fresh water, the Chief object that brought me to the island, for I had been told here was a stream running from the hills into the Sea, but this was not the case now. The first I was conducted to was a brackish spring between low and high water mark, amongst rocks in the Cove where we landed[3] and where no one would ever have thought of looking for fresh Water, and yet I beleive the Water might be good was it possible to take it up before the Sea Water mixes with it. Finding we did not like this Water they took us a little way into the island, where in a deep chasm was some very good Water which at the expence of some time and trouble might be conveyed down to the Sea by means of Spouts or troughs that might be made with Plantain leaves and the stem of the tree, but rather than be at that trouble I resol[v]ed to make what we had got serve.

[1] 'Eua.
[2] Ta'aufa'a: the man Cook knew as 'Tioonee' on the second voyage: II, p. 245.
[3] Ohonua; the anchorage, 'English Road', was the same as on the second voyage. Cf. II, p. 245, n. 1.

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Before I returned on board I set on foot a trade for Hogs and Yams, of the first we got but few but of the latter plenty. I put a shore at this island the Sheep I gave to Mariwaggy, viz a Ram and two Ewes of the Cape breed; they were intrusted to the care of Ta-oo-fa who seemed to be proud of his charge. As the Dogs had not yet got to this island I looked upon it to be the properest place for sheep.

SUNDAY 13*th*. The 13th in the after noon a party of us traveled to the top of the highest hill in order to have a View of the interior parts of the island. About half way we crossed a deep Valley, whose bottom and sides were clothed with timber, though composed of hardly any thing but coral rock, which, as was observed on Tongatabu, was perforated into all those holes and inequalities we find it on the Sea Coast, though this could not be less than two or three hundred feet above the livel of the Sea. Indeed we found the same Coral till we began to approach the summits of the highest hills, these were chiefly composed of yellowish soft sandy stone. The soil for the most part is a redish Cley which in many places seemed to be very deep.[1] On the very summit of the highest hill is raised a round platform or Mount of earth, supported by a wall of Coral stone, which to bring so high must have cost much labour. Our guides told us that this Mount was raised by order of their Chief and that they sometimes met there to drink Cava[2]—there being a spring of very good Water not many paces from it, and about a mile lower down a runing stream which we were told finds its way to the Sea when the rains are copious; we also met with Water in many little holes so that by diging no doubt but great plenty would be found. From this hill we had a full View of the whole island except a part of the south point; the SE side from which the hills are not far distant, rises with very great inequalities directly from the Sea, so that the plains and Medows, of which here are some of great extent, lay all on the NW side; and as they are

[1] 'Eua geologically is an interesting combination of the coral and the volcanic island. Coralline limestone was deposited on an underwater volcanic base; then renewed volcanic activity was followed by intermittent uplift, and later tilting which made the east and south sides higher than the west and north ones. Hence the combination of coral rock, soft volcanic tuff and volcanic soil which Cook describes in these last two sentences, and the landscape he describes further on. Parts of the island were naturally very fertile. To the tributes printed in II, p. 260, n. 4 may now be added one from Edgar. 'This little Island may be stiled the Montpelier of the Friendly Isles—the Land is higher than any of the others, and affords some of the most Romantick & beautiful Valleys in the World the greatest part of this Island is not planted the Earth or Soil of which bears the Strongest resemblance to red Ocre—tho' there is great abundance of every thing for it's inhabitants the Walks are enchanting and the whole Island is a little Paradise.'

[2] It was an *esi*, or 'rest-mound', a mound built for a particular chief, in some advantageous spot, where he might take his ease, and recreate his spirit with the view, which Cook goes on to describe. Sometimes the ownership would lie in the whole chiefly family. The Tongans were very conscious of natural beauty, as well as of the pleasure of cooling breezes.

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what is merely Ornaments may be highly valuable at one time and not so at a nother. When we first arrived at Anamoca the people would hardly take them in exchange for fruit, but when Feenough arrived they rose in their Value to what I have just mentioned.

For some of the above mentioned articles every refreshment may be procured that the islands produceth and which is Hogs, Fowls, Fish, Yams, Bread fruit, Plantains, Cocoanuts, Sugar Cane and in general every[thing] that is to be got at Otahiete or the Society isles. Their Yams are excellent and when grown to perfection keep very well at sea; but their Pork, Bread fruit and Plantains altho very good are nevertheless much inferior to the same articles at the Society isles. Good Water a very Matirial article to Shipping is scarce at all these islands, its true it is to be found on them all but then it is either too inconsideral or ilconvenient to come at: but sence they afford plenty of Provisions and Cocoanuts one may very well despence with[1] such Water as is to be got and if one is not over nice there will be no want. While we lay at Anchor under Ogodoo, some people from Oghao informed us, that there was a Stream of water in that island which came from the Mountain and run into the Sea on the sw side of the island where there was anchorage, that is on that side facing *O'tafoa*, an island remarkable by having a considerable Volcano in it which burnt Violently all the time we were in its neighbourhood. Oghao and O'tofoa are also remarkable on account of their height: it is from the latter they get the black Stone on which they make their hatchets and other stone tools.[2]

Under the denomination of *Friendly Isles* we must include not only *Happi* which I visited but all those that have been discovered nearly under the same Meridian to the North,[3] as well as some others which have never been seen by any European but are under the Dominion of *Tongatabu*, which is the Capital (tho not the largest) and seat of Goverment. If we credet the Inhabitants this *Archipelago* consi[s]ts of One hundred and fifty three islands,[4] some indeed are mere spots and without Inhabitants, and others must lay in Groups like those about

for blue made it the fashionable one, & all others were in a Manner despisd; Green & red however latterly began to rival it. Red cloth or bays was also much esteem'd, & linnen. . . .'—King, 17 July.

[1] *despence with*, in the sense here, I think, of 'put up with'.

[2] There was naturally a plentiful supply of basalt on the volcanic Tofua.

[3] Cf. II, p. 449, where Cook virtually settles the limits of the Friendly Islands.

[4] Cf. p. 100 above. 'We have the names of 120 diff[t] Islands & many have reckon'd by small stones 150: amongst these are doubtless, included every small spot, but there are 12 which they say are high like Eōōa & thirty seven large, of their size we can only judge in general from their deeming Anamōōka a small Island & Tonga-taboō a large one, but amongst all this Group, there are three, which by many accounts, & being frequently mention'd are full as considerable as Tonga-taboō; these are Va'vaōō, Hamóa & Feegee. . . .'—King, f. 87.

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duct you through between Maccaha and Monooaffee[1] or the 4th and 133
5th isles which you will preceive to lay off the West point of the 504
Lagoon, or you may go between the 3rd and 4th that is between
Pangymaudoo and Manooaffee,[2] but this channel is much Narrower
than the other. There runs a very strong tide in both, the flood as I
have before observed, comes in from the NW and the Ebb, retur[n]s
the same way, but I shall speak of the Tides in a nother place. As
soon as you are through either of these Channels haul in for the shore
of Tongatabu and Anchor up in the bieght between it and Pangy-
maudoo, before a Creek leading into the lagoon, into which boats can
go at half flood.[3]

Altho *Tongatabu* has the best harbour *Anamocka* furnishes the best 312
Water, though it cannot be called good, however by diging holes near
the side of the Pond one gets what may be called tolerable. This
island too is the best situated for drawing refreshments from all the
other as being nearly in the centre. Besides the road in which we 133
anchored and the harbour within the SW point, there is a creek in
the reef before the Eastern Sandy Cove on the North side of the
island, in which two or th[r]ee Ships might lay very secure by moor-
ing head and Stern with their anchors or Moorings fast to the
rocks.

*Happi* is a group of islands extending SWBS and NEBN about 19 101
Miles and are connected to each other by a reef of coral rock. The
North end lies in the Latitude of 19°39′ S and 33′ of Longitude to the 131
East of Anamock[a], between them are a great many small islands
sand banks and breakers, so that the safest way to come at Happi is
either by the rout I took or round by the North, according to the
situation of the Ship bound thither. *Lefooga* off which we Anchored is
the most fertile isle of them all and of course the best inhabited.
There is anchorage along the NW side of this island, but it will be 133
necessary to examine the ground well before you moor, for altho the
lead may bring up fine sand there are nevertheless some sharp coral
rocks that would soon distroy the Cables.

Those who want a more particular description of these islands 128
must have recourse to the annexed Chart, in which every thing is
deleneated with as much accuracy as circumstances would admit.
Recourse must also be had to the same Chart for the better finding
out the several stations of the Ships and their rout from the one to

[1] Makaha'a and Monu afe.

[2] It should be Pangaimotu and Makaha'a. Cook's names, repeated from the passage on p. 155 above, suggest that he had got Makaha'a and Monu afe mixed in his mind, though his chart was correct.

[3] Here he means the passage between Holeva (his 'Observatory Point') and Nukumuku.

A [See category 102, p. 104--Analyst]

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609 apiece, but bunches of plantanes or fowls were purchas'd for
499 middling siz'd nails. The inhabitants were not numerous and their
huts which were collected together and stood within a plantane walk
361 but indifferent: not far from them there was a pretty large pond of
312 fresh water, which was tolerable though not equal to what we com-
monly meet with in streams, of which there was not the least
114 appearance. Between two and three in the afternoon we pass'd this
133 island, the higher parts of which are not wooded and seem to be
[137] uncultivated, but it has notwithstanding a pleasant appearance. We
pass'd near a reef or shoal that lyes to the sw of it and in the evening
were abreast of Annamocka, but being three or four miles to lee-
ward kept turning up as we had no soundings with less than 40
fathom which made it inconv[en]ient to anchor. The bottom was
rocky & we had sometimes 55 fathom but at eleven at night 50 with
the same sort of ground.

132 WEDNESDAY 30th. *Long.* TK 184.41 E. The wind from ENE to N and
NBW. Moderate breezes and sometimes gentle or almost calm. The
weather dull with a great deal of rain early in the morning and some
114 in the afternoon. A swell from the sw. Before day light we continued
to make short boards and when that appear'd were nearly in the
same place as last night, but soon after as there was but little wind we
[133] fell more to leeward. When the breeze sprung up we stood in and at
eleven in the forenoon were near the shore of Annamocka eete[1] or
little Annamocka, off which lye some shoals on which a high surf
broke. We afterwards made several tacks and as the wind became
more favourable in the afternoon we lay up for the anchoring place
at Annamocka, but it failing us in the evening we anchor'd in 42
fathom coral sand and shells about two miles off shore at the WNW
114 part of the island. In the forenoon we saw two islands to the NW^t^ward
133 which are those call'd Kaybay and Mattafôâ[a] in Abel Tasmans plate
[103] of Annamocka, where they are represented too small. The one is a
single mountain of a Conic figure which has a noble appearance, and
the other is pretty long and flat on the top though much higher than
any of the neighbouring isles (except that just mention'd) or indeed
439 of any we had yet seen between the tropics. All the day we had
several canoes, sometimes near twenty, about the ship from whom we
purchas'd a great quantity of vegetables and about a dozen small
hogs and pigs besides many fowls. Our trade was brisker today as

[a] Their names as told us by the natives are 'Kâô and To'foos. [Kao and Tofua.]

[1] Nomuka Iki.

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is of a steep rugged coral rock nine or ten feet high, except the two sandy beaches already mentioned, which have a reef of rock extended from across their entrance to the shore and defends them from the sea. They make excellent harbours for boats but it is difficult to get in at low water, though at that time it is easy landing on the rocky shore without if the weather is moderate. On the SE side which the Master examin'd is a fine sandy beach with good anchoring & landing, but it is expos'd to the ESE wind which blows almost constantly and sometimes pretty fresh, from whence it can scarcely be preferable to our anchoring place, the best part of which seems just to the W^ward of the largest sandy beach, as appear'd from the Discovery lying foul by being a little the other way. In the centre of the isle is a large Salt lake about a mile & a half across, round which the land rises like a bank with a gradual ascent; but we could not see any communication it has with the sea, though from the low land that runs across to it from the largest sandy Beach and the sandy soil it would appear it may have once communicated that way. There is another lake or pond, but much smaller, a little way from the shore on the left hand of the sandy beach from which we took our water, and though brackish may if taken up after rain (a great deal of which luckily happened just before our arrival) answer the purposes of a ship sufficiently. The soil on the rising parts of the island & especially towards the sea is of a reddish clayey disposition or a black loose mould, but there is no other water than the pool already mentioned, except in some small holes dug by the natives near the last which afford much better water than the pool itself.

It is very well cultivated except in a few places, and there are some others which appear to lye waste but are only left to recover the strength exhausted by constant culture, for we have seen them frequently breaking in these spots to plant again. The plantations consist chiefly of Yams and plantanes, many of which are very extensive and often inclos'd with neat fences of reed dispos'd obliquely across each other about six feet high. Within these are frequently seen other fences of less compass which surround the houses of the principal people, but for the most part these are found

can compare high land, and shall therefore say that it is the next in degree whether with respect to the whole body of land being high or its being interspers'd with high hills. Very high or mountainous land cannot be easily comprehended in a single definition, but may be understood by its always exceeding the other & adding some particular description of its height.

It should be observd that the criterion of low land mention'd above can hardly be applied to Annamooka and some of the isles about it, but I have considerd them as low merely to avoid confusion, as they cannot be admitted to the rank of those of a moderate height which we have yet seen, as Wateeoo & Mang'ya.

A [of Nomuka--Analyst]

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whole might supply the imagination with an idea of some fairy land realiz'd. It would appear that some of these places may be form'd after the manner we have suppos'd of Palmerstons Island, as there is one which as yet is entirely sand and another that has only one bush or tree. Indeed the appearance of Annamooka in general argues also such a mode of formation, did not its height perswade us that the sea has either made a very sudden recess or that it has begun to do so at a period so remote as scarcely to coincide with the date of the Creation.

At five in the evening we had reach'd Kotoo the most N°westerly of the low islands, a little beyond which is a shoal or reef on which the sea breaks all around. On passing it we were about two leagues from Toofôá, the smoke of which we had seen several times in the day though it had now almost ceas'd. This island is about ten leagues NNW from Anna'mooka and though according to the natives but thinly inhabited has good water. They call the Volcano upon it Kolloo'feea[1] and say it is an O'tooa or divinity, about which they seem to have some superstitious notions. They say it sometimes throws up very large stones and compare the Crater to the size of a small islet, which has never ceas'd smoaking in their memory nor have they any tradition that it ever did. We now hauld our wind and stood ESE towards the islands already mention'd which form here almost a semicircle. At six were about two miles from the shore of one of the largest calld Ma'toogoo,[2] when we sounded and had ground with 55 fathom a fine black sandy bottom, and soon after nearly the same water with a coarser white sand. We then tack'd and stood back having for half an hour between 50 and 60 fathom, when we brought to with the main-topsail to the mast for some time & afterwards stood on to the westward. A great many Egg birds and flying fish were seen in the passage to day, and it was observ'd that after sailing in the morning a tide or current from the westward set us much over towards the islands on the right.

THURSDAY 15th. *Therm.* 72½:73:74½:77:75:74½. Light airs of wind from the S°ward and frequently quite calm with very fine weather. The sea perfectly smooth. Between twelve and one in the morning we tack'd and stood eastward keeping close haul'd to pass to the Southward of Fotoohâá which is the Island next Kâó. At day light were not far from the last place, which is a vast rock of a conic figure with marks on its sides as if made by torrents rushing down. After passing

[1] The name of the volcano is Lofia. *Ko* is the nominative article. Lofia seems also to have been the name of the '*atua* or god who dwelt within the crater, throwing up fire and smoke and stones.

[2] Matuku.

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SUNDAY 18th. The wind E . Moderate breezes with good weather. The Gunner was employ'd to trade on shore and purchas'd a good many hogs, plantanes &c but the greatest supply we had was a present which Fee'nou made the Captain of a vast quantity of Yams, Plantanes, Sugar cane &c and two hogs, which was shar'd between the two ships. Amongst other things we purchas'd yesterday a fine green Turtle of above 300 Lib., & to day the decks were so crowded with the natives who came to barter or were incited by curiosity that it was almost impossible to stir.

MONDAY 19th. The wind Easterly. Gentle breezes with fine weather. We continued to barter with the natives on shore as yesterday and a great number were on board.

As we wanted to obtain some knowledge of the country some of us mention'd it to Fee'nou, who sent a person as a guide and to protect us from any insult from the natives. We travers'd nearly the whole island of Lai'fooga and found it in several respects superior to Annamooka. The plantations were both more numerous and extensive and we found large spots well planted with the Morus papyrifera (paper Mulberry),[1] but in many places towards the sea, especially on the east side, the country is still waste owing perhaps to the sandy soil, as it is much lower than Annamooka or its surrounding isles. Towards the middle of the island the soil is better and much better inhabited than the other parts, for we met here with very large plantations, fenc'd in in such a manner that the fences running parallel to each other form'd fine spacious roads that would appear an ornament in the most civilizd countrys. It however labours under the inconvenience of having no good water that we could see, for though we found several ponds the water was either very brackish or stinking, and in some large holes in the coral rock which is seldom above two or three feet from the surface it was no better than common sea water. At one place we saw an artificial mount rais'd to a considerable height with an arbour of low trees neatly contriv'd, under which our guide made us understand people sate to catch pigeons.[2] At another place was a house four or five times as large as the common sort with a large area of grass before it which seem'd a place for the people to resort publickly to;[3] and near the landing place we saw one of their burying grounds, which was a mount two or three feet high coverd with gravel and had four or five small huts on it, in which they said the bodys of some of their principle people were interr'd.[4] Most of the

[1] *Broussonetia papyrifera*, Tongan Hiapo.
[2] Tongan *mala'e*.
[3] One of the mounds called *siahpa*.
[4] A *fa'itoka*.

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water, and we had an oppurtunity time enough to warn our consort of the danger by firing three swivels.

In the fore noon we attempted to work up towards Hafaiva (which is the largest isle hereabouts) between Pootoo poo'tooa & a shoal that lyes NE from Kotoo, but making little progress and the same weather being likely to continue, we came to an anchor at noon in fifty fathom a coarse sandy bottom about a mile WBN from Pootoo poo'tooa, Fotoohàà bearing nearly NNE, Kotoo SWBS, and the shoal to the NE of it SSE and SE. The Discovery also came to soon after a little to the NE of us. Several Canoes came off from Ha'faiva with Cocoa nuts & Plantanes and in the morning we sent the pinnace on shore to Kotoo with our Indian guests, who were so heartily tir'd of their short Voy[age] that they had once prepar'd themselves to swim to it. Their greatest distress was with respect to their food, for they were not fond of Pork dress'd after our manner and liv'd chiefly on Yams. In the evening we caught a large Snapper of twelve or fourteen Lib. and a Grooper of the same size.

MONDAY 2d. The wind SE. Fresh breezes with cloudy weather in the forenoon, but afterwards clearer. In the forenoon the Captain went on shore to Kotoo, which is scarcely accessible to boats from the coral reefs that surround it. It is not more than a mile and a half or two mile long and not so broad. The NW end is low like the islands of Hapaee, but it rises suddenly in the middle and terminates in reddish clayey cliffs at the SE end about thirty feet high. The soil thereabouts is of the same sort as in the cliffs but in the other parts it is a loose black mould. It produces the same things as the other islands and is tolerably cultivated but is thinly inhabited. We saw Annamooka from the highest part of it and the Captn thought he perceivd a clear passage about Toong'ooa and the other isles towards that place. Our people were employ'd in cutting some grass for the cattle and we planted some Melon seeds with which the natives seem'd much pleas'd and inclos'd them with branches. On our return to the boat we met with two or three ponds of water but it was very salt, and near them was one of their burying places that was much neater than those which were seen at Hapaee.

Several Canoes came from the different islands to barter their cocoa nuts, plantanes &c and we observ'd that almost all of them as well as the inhabitants of Kotoo were affected with a violent cough and slight sore throat, which also made its appearance on board for two days past, perhaps from the sudden change to and continuance of the bad weather.

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The master was sent in the cutter to see if there was a passage between the large reef Ko'koppo and 'Kotoo but though he found it clear it was so narrow as not to be worth hazarding the working through it for all that could be gain'd. 114 133

TUESDAY 3d. The wind SE. Fresh breezes with fine weather. The master was sent with the cutter to try and find a good passage between Poo'too pootooa and the reef to the SE of us into Ha'faiva but found it would be better to go in to the eastward of Pootoo poo'tooa, though even there it is narrow. He found good anchoring at Ha'faiva but says to the So'ward of that about Matoogoo & the other isles there are a great number of small detach'd shoals which would make it almost impossible to get to the So'ward that way, though the Captain thought he saw it clear yesterday from 'Kotoo. He sail'd round Hafaiva, landed and found it a pleasant island but the water which stood in a pond was little better than that at the other isles. We had a visit from Poulaho in the forenoon who has follow'd us closely from Hapaee and slept at one or other of the islands every night. He brought a present of bread fruit which seems all these small islands can now afford, & to be nearer us he has mov'd from Ha'faiva to Kotoo with two large Canoes since yesterday. He approv'd much of our going to Amsterdam from the time it was first mention'd, and presses Omaee who has been ashore with him these two nights to stay at Amsterdam. [132] [312] 643 648 [431]

WEDNESDAY 4th. The wind ESE or EBS. Fresh breezes and sometimes brisk squalls during which it generally veer'd to EBN. The weather cloudy and sometimes showers of rain. A considerable sea. In the morning between seven and eight we weigh'd and stood up round the NW part of the reef off Kotoo and then hauld close to the So'ward. We soon came in sight of Anna'mooka and at noon were abreast of it, passing to the Eastward of a large shoal that lyes three leagues west from it. At one afternoon we tackd and then made several boards but could not fetch the island, the N part of which bore ENE five or six miles distant in the dusk of the evening and the S part of Anna-mooka'eeke SEBE. 132 114 114 133

The Discovery could not weather the shoal which oblig'd her to make a stretch to the No'ward, by which she fell so far to leeward that we could scarcely see her in the evening. Saw several Terns, Shear-waters, and a good many flying fish in the passage. 114 [136]

THURSDAY 5th. The wind ESE. Strong breezes or brisk gales with dark cloudy weather. A considerable sea. Before day light we kept turning making boards of about two hours and at dawn the N part of 132 114

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the two Ships while working in, with whom we traded for hogs, fowls & vegetables only as the other articles had been prohibited by the Captain as at Annamooka.

WEDNESDAY 11th. The wind SE. Moderate breezes with cloudy weather. In the forenoon we pitch'd a tent just by the house mention'd yesterday, which is almost the only one here as the country near it is not at all cultivated. The horses cattle & sheep &c were afterwards sent on shore and a party of marines with their officer to protect the people. We discoverd two or three ponds near the place but they had all very bad water, though we found one on Pang'ia motoo that had rather fresher water than any we have met with amongst the islands, but rather dirty from the little care taken of it by the natives.

A good many Canoes came off & barterd Yams, Cocoa nuts and a few hogs but they were not near so numerous as yesterday, though we expected a much brisker trade here than any place we had been at from its greater extent.

THURSDAY 12th. The wind SE. Gentle breezes with very fine weather. On the evening we arriv'd here the Captain brought on board a person who had attach'd himself to him as a friend when he touch'd at this island in 1773, and another who had done the same with Captn Furneaux, who commanded the Adventure. Amongst other things they mention'd a person nam'd Maree'wagee,[1] who they said was of the first consequence in the place and as they were understood superior to Poulaho, to whom he was related, but so old that he liv'd in retirement and yet was held in great veneration. It excited his curiosity so much that he proposd yesterday to Poulaho that he should pay him a visit, which the other readily agreed to and offer'd to accompany him, at the same time saying he would send previous notice to Maree'wagee that such a visit was intended him. The Captain accordingly set out in the pinnace this morning carrying some things with him as a present, and Captn Clarke joind him in one of his own boats. We went round Makka'hââ to the eastward, and then turning to the SEward according to Poulahos directions row'd up into a spacious bay whose entrance from the east side of Hôôlaiva to the opposite point seems to be about two miles, the breadth within that three and the depth near four, but it was so full of shoals that we found it difficult to get up with the boats. The east and west sides are low, with some creeks running into the last farther than we could see edgd with mangroves, but at the bottom or SE part the land rises to

[1] Macaliuaki.

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287 a muscle shell. It is then roll'd up to take of the convexity which it
248 had round the plant, tied and macerated in water for some time (they
237 say a night), after which it is laid across the trunk of a small tree squar'd, and beaten with a square wooden instrument about a foot long, full of coarse grooves on all sides but sometimes with one plain. According to the size of the bark a piece is soon produc'd but the operation is often repeated by another hand, or it is folded several times and beat longer by the same, which seems rather to close than divide its texture. When it is sufficiently done it is spread out to dry, the pieces being from four or five feet to six or more in length and
824 half as broad. They are then given to another person who joins the
381 pieces by smearing part of them over with the viscous juice of a Berry call'd 'Tooo,[a] which serves as a glue, till they become of a considerable size and are then laid over a large piece of wood with a kind of stamp made of a fibrous substance pretty closely interwoven
824 under it. They then take a bit of cloth and dip it in a juice which
386 stands close by in a cocoa nut shell, express'd from the bark of a tree with the outer rind scrap'd off call'd Kokka,[1] and rub it briskly upon the cloth, which at once leaves a dull brown colour and a gloss for glazing & dryness upon its surface, the stamp at the same time making a slight impression that answers no other purpose which I could see than perhaps to make the several pieces that are glued together stick a little more firmly. In this manner they proceed joining and staining by degrees till they produce a piece of such length and breadth as they want, generally leaving a border of a
824 foot broad at the sides and longer at the ends unstaind. Through the
386 whole, if any part of the original pieces are too thin or have holes, which is often the case, they glue spare bits upon them till it is of an equal thickness; and when they want to produce a black colour they mix the soot procur'd from an oily nut calld Dooe'dooe[2] with the juice of the Kokka in different quantitys as they want the tinge. They say that the black sort, which is commonly most glaz'd, makes a cold dress but the other a warm, and to obtain strength in both they are always carefull to join the small pieces length-ways which makes it impossible to tear the cloth in any direction but one.

312 As we wanted much to know if there was any good water about the bay our guides said they would conduct us to such a place and carried us to two different spots from whence the tide had fallen some way,

[a] This is the Cordia. [The Tahitian Tou is *Cordia subcordata*, but the Tongan tree of which the berries were used for this purpose was *Melochia aristata* or *M. odorata*. Cf. Cook, p. 172, n. 1 above.]

[1] Koka, *Bischofia javanica*.

[2] Tuitui, *Aleurites moluccana*.

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where we found several people bathing, but the water was too salt to use and we always found that what they call'd good water was almost intolerable to us, a sure proof that they are entire strangers to it generally speaking. In one place where it still continued to run out from under the rock it was somewhat fresher, & might probably be still more so the longer the water ebb'd, but it was difficult to say whether this would have been a constant source supposing the tide never reach'd it, or only a certain quantity wash'd from the earth during the time the last remaind in these vacuitys and mix'd with it.

When we return'd in the evening Poulaho had a pretty large hog dressd for our entertainment, with Yams, Cocoa nuts &c and afterwards provided us with as good a lodging as his house could afford, giving us mats to sleep on and cloth to cover us, but our host had made himself so happy with some wine & brandy we had brought that it was a matter of much indifference to him where he lay.

FRIDAY 27th. The Wind ESE. Moderate breezes fine weather. In the morning Poulaho told us he was going presently to perform a ceremony call'd Tooge[1] which they do at the death of their relations and even in other distressing situations. It is done by striking the highest part of the cheek bone alternately with the inside of the fists for some time, which abrades the skin and makes the blood flow out in a considerable quantity, at the same time accompanying it with a dolefull kind of cry or weeping. We were glad to have an opportunity of seeing a custom so universal that perhaps eight in ten of them retain the marks of having perform'd it, and great numbers of them very recent, at which time it looks as if a hollow circle [were] burnt in; but were disappointed at last, for though he went to an inclosure where a large circle of people were sitting to drink Kava we saw no other ceremony than he and the people that were with him putting some green leaves about their necks, which they broke and threw down when they came to the place. We had seen them drinking the Kava sometimes at the other islands, but by no means so frequently as here, where it seems the only forenoon employment of the principal people and the drinking it is confin'd to them only, unless they chance to prepare a little more than is wanted when it is distributed to any person indifferently. The Kava is a species of pepper[2] which they cultivate for this purpose and esteem it a valuable article, taking great care to defend the young plants from any injury and commonly plant it about their houses. It seldom grows to more than a mans height, though I have seen some plants almost double that, and

[1] *tuki.*

[2] *Piper methysticum.*

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249 branches considerably with large heart shap'd leaves and jointed
stalks. The root is the only part us'd, which being dug up is given to
216 the servants that attend, who breaking it in pieces scrape the dirt off
with a shell or bit of stick, and each begins & chews his portion which
[415] they spit into a bit of plantane leaf: and the person who is to prepare
[412] it collects all these mouthfulls and puts them into a large wooden dish
or bowl with three or four feet, & adds as much water as will make it
of a proper strength. It is then well mixd up with the hands, and some
loose stuff which mats are made of thrown on the surface, which
being turn'd in intercepts the fibrous part and is wrung hard to get
as much as possible out from it, when it is given to some of the bye
sitters who sometimes prepare a weaker sort from it for themselves by
276 chewing it again. They then begin to distribute it in little cups made
574 of a bit of plantane leaf tied at each end, but where the company is
[415] large & respectable as our present one was the person who distributes
it calls out to know who the servants shall carry it to, and is commonly
directed by one person belonging to the chief who gives the Kava.
Each person has a clean cup which they throw away as soon as it is
drank, and the quantity is commonly about a quarter of a pint,
though they sometimes venture on two cups if much has been made.
276 The immediate effect it produces is not perceptible on these people
who use it so frequently, but on some of ours who try'd it, though so
nastily prepar'd, it had the same power as spirits in making them
drunk, or rather producing that kind of stupefaction in consequence
of using Opium or other substances of that kind. It should be observ'd
at the same time that though they have it always fresh prepar'd—
and I have seen them drink it seven times before noon—it is never-
theless so disagreeable or at least seems so that the greatest part of
them cannot swallow it without making wry faces and shuddering
afterwards.

114 After this we set out from Mooa and meeting several Canoes in our
way Poulaho calld to them and took what fish he pleas'd. We din'd
[643] on a small island call'd 'Onne'vy[1] about a league off the mouth of the
[312] bay, where Poulaho said there was good water but we found as was
[103] said before that these people have very little knowledge of such a
valuable article for there was none of it tolerable to us. This island is
311 quite in a natural state, being only frequented as a fishing place, and
226 has nearly the same productions as Palmerstons island with some
E'toà trees.

114 On returning to the ship we pass'd a curious large rock which
133 seems to have been thrown upon the reef where it stands by accident.

[1] 'Onevai.

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commodity, and amongst the small articles files or rather rasps were held in high estimation. They are undoubtedly of the same origin with the inhabitants of New Zeeland and the isles eastward, for though in some respects they differ in many others they also agree. Their first population happend no doubt in the same manner with the other islands of this vast ocean, and indeed from the great number of these already discover'd we can hardly be at a loss to form a judgment of this manner especially if it be allowd, which is not improbable, that they are much more numerous and at less distances from each other than is generally imagind. Necessity if not choice would soon force the surplus of people which must follow the population of a small isle to emigrate; and I believe a very short time would bring them to some other isle as yet uninhabited. Accident too as well as design has no doubt often had a share in peopling the different parts of the world, & this may be the case in all the places discoverd or visited in this voyage, though it might at first appear the people must be naturally the same. This is far from being the case, but we must attribute it to the different stock from which they sprung before their arrival in the south sea, or we must believe that at the creation every particular island was furnishd with its inhabitants in the same manner as with its peculiar plants and animals.

SATURDAY 12. The wind E. Fresh breezes with fine Weather. After weathering the NE part of Tonga last night the wind being rather favourable we stretch'd over for E'ooa and fetch'd it about two in the morning, but kept turning till day light and at seven anchor'd in the same place where Captn Cook had been in 1773, which he calld English road, in fathom water, one extreme of the land bearing the other , one end of Tonga , and the other . The Discovery did not anchor till some time after, when she brought to a little to the Soward and within us. Few Canoes came off but in one was the Chief nam'd Ta'oofa.[1] The Captn went on shore before and after dinner and found some water which was but very indifferent. They also traded for some Yams and above a dozen of hogs.

As we lay at anchor this island bore a very different aspect from any we had seen and forms a most beutifull landscape. It is higher than any we pass'd since leaving New Zeeland (as Kaò may justly be reckond an immense rock) not excepting Mang'ŷà and Wateeoo, & from its top which is almost flat declines very gently towards the sea. As the other isles of this cluster are flat the eye can distinguish

[1] Ta'aufa'a or 'Tiooncc'.

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nothing but the trees that cover them, but here the land rising gently 133
upwards presents us with an extensive prospect, where groves of trees 137
are only interspers'd at irregular distances in beautifull disorder and
the rest coverd with grass. Near the shore again it is quite cover'd
with various trees amongst which are the habitations of the natives, [361]
and to the right of our station was one of the most extensive groves of
Cocoa palms I ever saw.

SUNDAY 13th. The wind E. Fresh breezes with cloudy Wr & in the 132
evening a little rain. Brought off a Launch load of water. Traded on 114
shore for a good number of Yams and some hogs.

In the afternoon a party of us made an excursion to the highest 439
part of the island, which was a little to the right, and in our way
pass'd a deep valley or rather chasm which is very narrow. About 133
half way up we could see that part of the island under us extended [311]
into a large down which had several risings interspersd with small
clusters of trees, but quite uncultivated, and coverd with grass about
the height of the knee where numberless cattle might be fed. On the [349]
top we found a round heap of coral stones which they call'd E'tchee
as that at Tonga, and seem'd to say it was a mark of Poulahos
sovereignty over the island. At this place was also a spring of excellent [312]
water, and though we found Coral rock at the surface, on crossing the
deep valley which is several hundred feet above the sea we saw here
a soft reddish rock and some sand stone. The top of the island from
this to the north point is an extended flat like that before mentioned,
behind which it rises gradually; but the east side of the island, though
it has a flat like the opposite one, terminates in steep craggs towards
the sea and is at this place in all not above five or six miles broad.
Besides the plants common on the other isles we found on the height 137
a species of Acrosticum,[1] Melastoma[2] and Fern tree[3] with a few other
ferns and plants not common below. Amongst the rest was the Jeejee
in its natural state which grows eight or ten feet high. We return'd by 487
another road which led us through a wooded part of the country and
about third way down met with a little pool of excellent water which 312
kept running into a much larger below, but we could not follow it as
the valley was rugged and the natives say it does not reach the sea
unless when it rains much. We found they burnt the grass in many 311
places but could not discover that it was intended for planting,
although they have a few spots cultivated almost to the top.

[1] Probably this was the fern Hakato, *Acrostichum aureum*.
[2] *Melastoma denticulatum*, a branched spreading shrub called in Tonga Pesikuku.
[3] The fern tree Longolongo, *Cycas circinalis*, found all over Tonga, and especially common on 'Eua.

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a break in the reef which they enter by here, and is the only place where landing is practicable. Unmoord ship in the morning. A little to the left of the landing place there is a kind of creek that runs up a little way into a large cleft chink or gully, the sides of which are formd by rugged rocks at least forty feet high, which I found upon examination to be the same as that calcareous substance[a] found on the highest part of Annamooka; from whence it is probable the Basis of this Island is of that substance and perhaps the craggs to the eastward, as this, is a division directly in a solid part of it. There was two places with excellent water near the upper part which with a little trouble might be conveyd down so as to water a ship, but it seems doubtfull if there is such a quantity to be always found in these places. It was so cool in this place, which is always shelter'd from the sun, that we found several of the sorts of fern growing in New Zeeland & some others here. We also found on returning by the high grounds that the rains for two days passd had washd down a kind of iron sand, like that us'd to dry up ink, upon the paths which was every where sparkling but so mixd with the common mould that no quantity could be collected.

Our people traded as yesterday and the chief Ta'oofa made the Captain a present of two pretty large piles of yams, which seemd to be collected by a kind of contribution as at the other isles. He also entertaind us with boxing and wrestling and as an Introduction several pairs of women box'd with the true spirit of female acrimony, one of the first sending off her antagonist with a bloody nose, but these matches seldom lasted long before some of their own sex rose and interposd. Whether the old observation is true that in enmity a woman is a more implacable adversary than a man, and that our present example will help to decide it I will not determine, but I am rather inclind to think their passion for speedy and universal conquest was the reason of our heroines engaging with such irresistible fury, as the shame of being conquer'd seemd to affect them more than the severity of the blows. At the same time we could not observe without pleasure another instance of the many we had seen before amongst the men of the great temper and even generosity they exhibit in sports which are properly their province, and ought never to engage female delicacy, for two of these after boxing a considerable time with great spirit and dexterity, and finding neither was likely to overcome, desisted suddenly and embracing kiss'd each other with

[a] If this is to be considerd as coral it is very different from that coarse calcareous basis from which all growing corals that spring from it seem to derive their support or rather covering, and is therefore to be reckond a distinct species or has perhaps no affinity to it.

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9



suppose we would never think of applying to on such occasions. It is therefore the best method if a single person or two should wish at any time to traverse the country to apply to the chief, who will send a guide which will be a perfect security against all insults, for if a larger company chuses to undertake such peregrinations they are seldom molested. At the same time it should be observ'd that it is every persons business to avoid giving them an oppurtunity of offering such insults, as it not only interrupts the good understanding which ought always to be cultivated with these people, both from a principle of humanity and as a means of obtaining with ease those supplys of refreshment which are always wanted by ships that visit them, but as it also exposes themselves to real danger: For though we cannot accuse any of the natives, however bad, of an intention to destroy or even hurt the person thus insulted, yet in the scuffle which must always happen before they can secure the cloaths which is their object a man may accidentally receive an irrecoverable blow.

THURSDAY 17th. The wind E. Gentle breezes and sometimes calm with close sultry weather and a good deal of rain. The Captn went on shore in the morning carrying the Indian with him whom he releas'd, and in the forenoon we weigh'd and steerd swbs to get an offing but afterwards hauld up SSE close to the wind.

Middleburg or as the natives call it E'ooa is only leagues from Tonga, and English road in Latitude Longitude E. The shore is every where bold, for the reef of reddish rock, almost like that at Wateeoo, which lines it in some places is scarcely a hundred yards broad. The island is of figure, about leagues in circuit, and as far as we know has no anchoring place but in English road. That as being an open road cannot be calld a place of safety, for though it lyes on the [west] side of the island experience has not yet convinced us that the winds from that quarter never blow with a strength sufficient to force a ship from her anchors, and the short time we lay there inform'd us that even when not blowing directly upon the shore a swell may be raisd which is both troublesome and may at times cut off all communication with the shore, as few Canoes came off to us at that time. Vegetables and hogs may be had in sufficient quantity, but water for the purposes of a ship is just as difficult to procure as at Tonga, and in other respects though a beutifull spot we found it much less convenient than that place. The anchoring ground too is not of the best sort as we found the Cable much rubb'd on heaving it up this morning. The people seem not to be in that excellent subordination we

56: Samwell D,T-5 (1777) 1967 OU9 Tonga OU9



439 We were soon surrounded by a great number of Canoes full of men who behaved in a friendly manner to us and sold us Hogs, Cocoa nuts, Plantains and other fruits for nails & beads.

122 JUNE 11th. The Tents with the 2 Astronomers' Observatories were erected on shore under a Guard of Marines, & all our live Stock was landed which consisted of 4 Horses, several head of Cattle, Sheep, Goats & Hogs with Peacocks, Turkies & Geese. Our Tents were situated at the upper end of a fine Area surrounded by Trees, it seems to be a place appropriated for the Exhibition of Public Games, such as wrestling, boxing &c. Close to the Tents was one of the Chiefs Houses, behind them lay a thick wood, on the right an Inlet which extended a considerable way up but was dry at low water, on the left was the Harbour where we could see between the Trees the Ships at anchor; the Observatories were erected without the Area close to the Beach but within sight of the Tents, they were inclosed with a Hedge [312] & always guarded by a Sentry. Near the Tents was a pool of in- [515] different fresh Water, of which there are many in the Island and are used as bathing places by the Natives. Powlohow took up his resi- 177 dence in a House a little way without the Area, that next to the Tents 825 was occupied by his Consent by some of the Gentlemen who were ordered a shore on duty, and another little Hut close by was allotted [122] us for the use of our Cattle & Poultry, whose appearance excited as [649] much astonishment and admiration as a Collection of wild Beasts at a Country fair in England. The Indians were a long time before they could be persuaded to approach near to the Horses & Cattle, but our Sheep & Goats, being more like their Hogs, they did not regard with the same degree of Terror tho' it was some time before they became thoroughly reconciled to the Goats; these on being approached by the Indians would rear on their hind Legs & make a push at them, which put them in bodily fear & often made whole armies fly. However they found out by degrees that they were as innocent as the Sheep & only more playful, so that at last the Indians passed by them 648 or advanced up to them without any dread. During the time of 609 erecting our Tents we were surrounded by a great Number of Indians who behaved in an orderly and peaceable Manner and at 643 night retired to their several Homes except the attendants of Powlohow, who remained with him at his House waiting for his Supper. [431] Some Servants arrived with provisions enough for a Hundred men which Powlohow, after a basket or two were laid by for himself, ordered to be laid at the Doors of our Tents as a present for our people together with a number of Cocoa nuts; the provision he

56: Samwell D,T-5 (1777) 1967 OU9 Tonga OU9



a small sized mean-looking People in comparison with the others & the women in general are not so handsome. A few of them lay on board the Ship every night.

The Island is high & of a very beautiful appearance; the Hilly part is covered with Verdure & the skirts of the Island along the Sea Shore covered with Cocoa nut, Breadfruit & other Trees; they have many Shaddocks here; the Produce of it is the same as that of Tonga-taboo. We got no water here.

THURSDAY JULY 17th. This forenoon we got under Sail with the wind at SE and stood to the southward, at Sunset took our Departure from Oohā bearing NE distant 2 or 3 Leagues, which was the last we saw of the Friendly Isles. We are now shaping our Course for Otaheite.

FRIDAY AUGUST 8th. Nothing remarkable happened on our Passage, till to day when in Lat. 24 S we fell in with the South east Trade and about noon discovered an Island to the Northward of us; we ran towards it till Sunset when we hauled our Wind & stood off & on during the night.

SATURDAY AUGUST 9th. At day light bore away for the Land, at 7 o'Clock hauled round the SW Point and soon after brought to under the lee of the Island. Sounded & had ground at 30 fathoms fine sand at the distance of about half a mile from the Reef. Several Canoes came off to the Ships but would not venture on board, but kept shouting to us at a distance. Omai understood their Language very well and spoke to them but still they were afraid of trusting themselves on board, he asked them the Name of the Island & they told him it was called Oto-boo-ee[1]: As there was no prospect of a Harbour or of getting any thing here, at nine o'Clock Captn Cook made sail & steered again for Otaheite. This Island is between four and five miles in length, is surrounded by a reef at a good distance from the Shore, with Openings that seemed navigable for Ships, it is high uneven Land, it appeared on our first making it like two Islands, being low in the middle & high at each end; at a little distance from the East end lay three small Islands. Lat. 23°22′ S, Long 210°50′ E. The people seemed in their Persons like the Otaheiteans, their Canoes were quite different in Shape from those of Otaheite & were painted of various Colours.

AUGUST 12th. Early this Morning we saw Osnaburgh Island & soon after came in Sight of Otaheite to the great pleasure of every one on board. Omai sat all day on the forecastle viewing his Native Shores

[1] Tubuai.

[pp. 1051-1300 not processed]

57: Clerke G,T-5 (1777) 1967 OU9 Tonga OU9



in the justice of this procedure, look'd on with seeming pleasure, and when I turn'd the fellow overboard, tho' there were at least 20 Canoes about, no one for a quarter of an hour wou'd take him up: I adher'd to this Plan, which tho' it did not abolish this confounded custom, it render'd it much less frequent. The Indians themselves so far saw the justice of it, that we had several instances of their detecting a Thief which had eluded the vigilance of our People, & bringing him to me with his stolen Goods; upon these Occasions I always liberally rewarded the Prosecutor & rewarded the Thief. I offerd abundance of fine Things if they wou'd return my Cats, but they were too fond of them, I found them irretrievable. Our general Trade at these Isles were Hatchets Nails, Knives, Looking-glasses, Beads, & sometimes a peice of red Cloth; the Blue & red Beads were what they most esteem'd, any other Colour they put very little Value upon.

Our Method was, whenever we went to an Island, one of the first things we did, was to look out for a convenient market Place; here we stationed our People who were adjudg'd to that duty, which were generally the Gunners of the 2 Ships, & here the Natives very regularly brought their Merchandize; sometimes they wou'd bring them to the Ships, where there were likewise people appointed to bargain with them. The Agee's frequently made us large presents of Yams, Hogs &c; this was pleasing, as it kept up that social appearance, which it was both our Inclination & Interest to maintain; but they were always in the End, by far the dearest Provision we got. Every place we went to was deficient in that important requisite, good Water, we got some at them all, but cou'd not denominate it good: at Anamooka it was rather brackish, at the Arpi Isles rather filthy, and at Amsterdam it was both; however it was all I believe very wholesome, for we found no bad effects from the use of any of it, we had no other, & our People were all very healthy, but it was not so palatable as we cou'd wish.

They tell us, that at Vow-Vow (which they say is a large Isle, laying N° of the Arpi Isles one days sail) there is a very good Harbour with a fine Stream of Water running into it;[1] they tell us too, that there's abundance of excellent Water at a Group of Isles, which they call Fidgi, which they say lie WNW 5 Days sail with a fair Wind from those they call the Arpi Isles where we were: five days sail for one of those Canoes is a great distance, they sail very fast; from all the Accounts I cou'd get, I shou'd conclude the distance about 200 Leagues. These Fidgi Men are the Masters of this part of the World; these People, own they beat and do as they please with them; they are very lavish in the praises of the Country; they say it abounds in every good thing, that the Women are very handsome, and the Men very good, if Friends, but if Enemies they are very devils; in short these our good Friends here, are in perfect dread of them, but they are now upon very good Terms. A Canoe came from Fidgi whilst we staid here; one peculiarity I observ'd in the Men, they had all the Grissle of the Ear cut out, so

[1] The reference may be to Neiafu, a deep and land-locked harbour.

58: King G,T-5 (1777) 1967 0U9 Tonga 0U9



mother; whenever we ask'd what they were, & if very superior people, they woud be surpris'd at the Question, & said they were Tamaha's, a distinguishing name higher than any, but what particular meaning is in the word, we coud not find out. Although from their fathers country they might not be intitled to power & Possesions, yet their superior rank may arise from that line, as they generally admit that they are oblig'd to shew signs of respect to the Feegee chiefs, by folding their hands before their face & bowing their bodies. Women in this Country enjoy equal Privi-ledges of honour & respect with the men, for at our Observatory there were two women who had homage paid to them by the Chiefs, & to one of them Fattafaihe used to bow: I understood this woman to be his near relation, she had her husband with her, who enjoyd none of these marks of honour.

### *'Eua*

*f. 86v.* [13 JULY] . . . on the top of the hill is a circular place pil'd round with coral stones & one or two large ones in the middle, this place they call'd Etchee[1] & said it was built as a mark of Powlohows sovereignty; there was an Excellent spring of fresh water close by it; we met in several places in the chasms of the rocks very good water & which might be conveyd down to where the Natives are, yet they do not appear to regard good water, as they in their houses always gave us indifferent & often very brackish water to drink. We were all delightd with the charming prospect from this hill; the Sea on the SE side of the Island is but at a little distance from it & the land rises in broken hills, rugg'd & cliffy, & is not capable of much improvement, but the NW part of the Island has a fine assemblage of hills & Valleys with extensive Meadows & patches of wood, with now & then a plantation; Yet this kind of Country, which we praise so much, does not answer so well the purposes of what the Natives cultivate as the flat borders by the Sea Side, so that it is in a great measure Waste; but it struck us strongly, as the best calculatd place for Cattle of all the Islands; & we thought that to make the Landscape the most charming one imaginable, woud be sheep & Cattle upon the Meadows & hills before us; We rather hop'd than firmly believ'd, that the sheep which had been given to Marrawaggee & now put on shore here woud thrive, since the 2 Yews were very poor & the Ram quite young, however as there are no dogs yet in this Island & as the Natives do not much admire them, they stand a chance of being unmolest'd & from that circumstance may thrive & answer the purpose for which they are left.

### DESCRIPTION OF THE FRIENDLY ISLANDS

*[Adm 55/116, ff. 88v–89, 89v–90, with excisions]*

In regard to their numbers I know of no criterion by which to make even a tolerable guess, the Natives followd us from one Island to another, therefore it is not possible to know the number of any one Island we visit'd; at

[1] *ui.*

58: King G,T-5 (1777) 1967 0U9 Tonga 0U9



the time that their entertainments were exhibit'd there might be not short of 12,000 people, who built temporary huts or slept under the trees about the tent; at the Ceremony at Moa[1] we suppose not less than 600 chiefs were assembled, but from these bodies I see no good conclusion to be drawn of the number in either all, or any one of them. From the Nature of the Country, requiring the labour & industry of the Natives for their support, it cannot be near so populous in proportion to their size as what the Society Islands are; the houses here are by no means thickly scatterd about & many parts in all the Islands are uncultivat'd, owing to the Sandiness & poverty of the Soil in low Islands, & in the high ones to their elevatd & expos'd situation; besides the larger low Islands have extensive lagoons & lakes as at Tonga & Anamooka, which considerably lessens the surface, leaving therefore their population to be gatherd from the nature of the Country. We will proceed to their Colour, form, & Natural dispositions.

The Friendly Islanders are of a lively brown Colour & a shade darker than Omai. Although many of their principal women were fairer, their colour resembles that of the Mallays we saw at the Cape of Good hope; they are in general above the middle size, many very tall men & but a few under sizd, they are firmly & compactly made about the joints, broad shoulderd & Muscular, & perhaps few natives exceed them in that form, which requires both strenght & agility; this is even to be observ'd in their walking but abundantly shewn in their athletick exercises & dances: their hair I believe is universally black or a dark brown when young, but they have a method of colouring it which deceives one at first; it is not unusual to see two diff[t] colours on the same head, & perhaps one purple; a sort of chalky paste which they very often daub upon their heads turns the hair a yellow sandy colour; they are still more various in their fashion of wearing it, being cut short on some parts & others left long, yet as they seem to admire fine long hair, we rather suppose that when it is even partially cut, & we know it to be the case when all short, that it is in memory of some deceas'd friend. There are but few who have beards, but shave very dextrously with 2 shells, laying one under the hair & the sharp point of the one above meeting that of the one below, cuts it close off. The Chiefs have glossy smooth skins preservd so by frequent washing; & as fresh water is scarce, they after bathing in salt water throw over them a few coco nut shells of fresh, which takes the salt which otherwise adheres to the skin, & which gives a disagreeable roughness to that of the common people, & afterwards rub over their bodies Coco nut Oile perfectly sweet & free from any disagreeable smell. There are nevertheless many cutanious marks from disorders & from voluntary inflictions; more than half of them are affect'd with the tetter or ringworm, which leaves behind a whitish mark; boils & blotches are often met with, & inflam'd sore Eyes are frequent; few are free from marks on the Cheek bone, which they make by quick repeating strokes with the knuckles on the death of their friends or relations, besides these there are many other disfiguring marks inflict'd on the same

[1] Mu'a.

262 pineapple and papaya are eaten in season, and kava is widely grown.
[241] Pigs and chickens thrive and, along with fish and tinned corned beef,
[231] form the main protein in the Tongan diet.

131 Geographically and administratively the Tongan islands can be divided into three main groups (see map, Figure 2.2). Tongatapu and
[133] 'Eua in the south have by far the largest land area. The central Ha'apai group consists of small coral limestone islands. Lifuka, largest of the Ha'apai group, is 4 1/4 miles long and 1 1/2 miles at its broadest place. The Vava'u group lies 60 miles northeast of
[504] Ha'apai and consists of one large and several small islands. Neiafu harbor, Vava'u, is one of the best land-locked harbors in the South Pacific. In addition to these three main groups there are outlying islands to the north, including Niuafo'ou, Niuatoputapu, Tafahi, Toku, and Formalei.

192 The temperature varies from the low 50°s to 90°, the humidity is usually very high, the mean being almost 80°. Annual rainfall is about 65 inches per year. There is usually a definite wet season from December to April and often a draught between October and December.
[312] Until recently all fresh water was rainwater. Tonga is subject to
[731] hurricanes and not infrequently thousands of coconut and banana trees, the basis of their cash economy, are ruined.

PEOPLE AND LANGUAGE

161 This is the geographical setting in which nearly 70,000 people play their daily social roles. The figures of the last Tongan census,

[441 cont.]

175 crossed it, we met with a most delightful walk about a mile in
311
487 length, formed of four rows of coco-nut trees, which ended in another lane between plantations of great regularity surrounded by shaddocks and other trees. It led through a cultivated valley to a spot where several paths crossed each other or met in one.
175 Here we saw a fine lawn covered with a delicate green turf, and
351 surrounded by large shady trees on all sides. In one corner of it there was a house, which was empty at present, its inhabitants being
175 probably by the water's side. Mr. Hodges sat down to draw this
126 delightful spot. We breathed the most delicious air in the world,
175 fraught with odours which might have revived a dying man; the sea
[136] breeze played with our hair and gently cooled us; a number of small birds twittered on all sides, and many amorous doves cooed harmoniously in the deepest shade of [442] the tree under which we were
[137] seated. The tree was remarkable for its roots, which came out of the stem near eight feet above the ground, and for its pods of more than a yard long, and two or three inches broad. This secluded spot, so rich in the best productions of nature, where we sat solitary with no other human being besides our two natives, struck us with the idea of enchanted ground, which being the creation of our own gay fancy, is commonly adorned with all possible beauties at once. In fact, there could not have been a more desirable spot for a little place of retirement, according to the elegant imagination of Horace, if it had only been supplied with a crystal fountain or
[312] a little murmuring rill! But water is unfortunately the only blessing
[764] denied this charming little island. To the left of this spot we
[487] discovered a shady walk, that brought us to another grassy lawn, at

[473 cont.]

of coco-nut core, and ornamented with shell-work and red feathers, or such [474] as were curiously wrought of mats in resemblance of fretwork. From these gestures I have great reason to suppose that their dances are of a dramatic kind, and public, like those which I have spoken of in the Society Isles, (See pag. 398). Schouten and Le Maire likewise strongly confirm this supposition by their account of the dances at Horne Island (24). It appeared, upon

24. See Mr. Dalrymple's Collection of Voyages, vol. II. p. 47.

the whole, that the customs and language of these islanders have a great affinity with those of the Taheitians, and that it would not therefore be very singular to find a coincidence even in their amusements. The greatest differences between these two tribes, who must have originated from the same stock, seem to be owing to the different nature of their islands. The Society Isles are well furnished with wood, and the tops of their mountains are still covered with inexhaustible forests. At the Friendly Isles this article is much scarcer, the surface (at least of those which we have seen) being almost entirely laid out in plantations. The natural consequence is, that the houses are lofty and of immense extent in the first group of islands; but much smaller and less convenient in the last. In one the canoes are numerous, I may almost say innumerable, and many of a vast size, and, in the other, very few in number, and much smaller. The mountains of the Society Isles continually attract the vapours from the atmosphere, and many rivulets descend [475] from the broken rocks into the plain, where they wind their serpentine course and glide smoothly to the sea. The inhabitants of those islands take advantage of this gift of bountiful nature, and not

[475 cont.]

175 171 312 only drink of the salutary element, but likewise bathe so frequently in it that no impurity can long adhere to their skin. It is very different with a people who are absolutely denied this blessing, and who must either content themselves with putrid stagnant rain-

175 515 water in a few dirty pools, or go entirely without it. They are obliged to have recourse to expedients in order to preserve a certain degree of cleanliness, which may preclude various distempers.

175 302 171 They therefore cut off their hair, and shave or clip their beards, which doubtless makes them look more unlike the Taheitians than they would otherwise do. Still these precautions are not sufficient,

175 312 especially as they have no fluid for drinking in any quantity. The

175 164 body is therefore very subject to leprous complaints, which are perhaps irritated by the use of the pepper-root water or awa.

175 304 Hence also that burning or blistering on the cheek-bones which we observed to be so general among this tribe, that hardly an individual was free from it, and which can only be used as a remedy

000 against some disorders. The soil of the Society Isles in the plains and vallies is rich, and the rivulets which intersect it, supply

175 171 433 abundance of moisture. All sorts of vegetables therefore thrive with great luxuriance upon it, and require little attendance or cultivation. This [476] profusion is become the source of that great luxury among the chiefs which we do not meet with at Tonga-

175 433 134 312 Tabboo. There the coral rock is covered only with a thin bed of mould, which sparingly affords nourishment to all sorts of trees; and the most useful of all, the bread-fruit tree, thrives imperfectly on the island, as it is destitute of water, except when a genial

000 shower happens to impregnate and fertilize the ground. The labour

175 [477 cont.]
181 to satisfy the most indispensible wants of nature, could make
642 them miserable. Be this as it may, so much seems to be certain,
651 that their systems of politics and religion, from their similarity
175 with the Taheitian, as far as we could judge, must have had one
171 common origin, perhaps in the mother country, from whence both
174 these colonies issued. Single dissonant customs, and opinions
may have acceded to the primitive ideas, in proportion as various
175 accidents, or human caprices have given rise to them. The
174 affinity of their languages is still more decisive. The greatest
197 part of the necessaries of life, common to both groups of islands,
the parts of the body, in short the most obvious and universal
ideas, were expressed at the Society and Friendly Isles nearly
175 by the same words. [478] We did not find that sonorousness in the
197 Tonga-Tabboo dialect, which is prevalent in that of Taheitee,
194 because the inhabitants of the former have adopted the F,K, and S,
so that their language is more replete with consonants. This
harshness is compensated however by the frequent use of the liquid
letters, L,M,N; and of the softer vowels E and I, to which we
must add that kind of singing tone, which they generally retain
even in common conversation.---But it is time to return from this
digression.

175 We did not part from our friends till sun-set, promising to
123 return to them once more the next morning. Our ships were well
122 provided with bananas, yams, and coco-nuts; and, considering the
175 small size of the island, as well as our short stay, sixty or eighty
hogs, besides a vast number of large fowls, were a surprising
[312] acquisition. During our stay we had searched the country in vain

[478 cont.]

for water, and the master had been sent to the eastward to survey Maria Bay, and the low isles which shelter that harbour. The situation of these islands he found very exactly represented in the charts of the ever accurate Tasman, and on one of them where he landed, he saw an astonishing number of speckled water-snakes, with flat tails, which are harmless, and distinguished in the system of Linnaeus, by the name of colubri laticaudati. In our branch we had not been unsuccessful, this little island having afforded us several new plants, among which was a new species of jesuit's bark, or cinchona, [479] of which the bitter bark may perhaps be equally efficacious with that of Peru. We also collected several birds unknown before, and purchased some live species, particularly of the parrot and pigeon tribe, of the natives, who seem to be very expert fowlers. But it did not appear to us, that the pigeons, which many carried perched on crooked sticks, were marks of distinction, though Schouten at Horne Island where the same custom prevails, is of that opinion (25). In the last boat which had brought our people on board in the evening, the Latoo or king had sent a great quantity of vegetables, together with a whole hog roasted, or dressed under ground, as a present to the captain. In the morning therefore, we embarked early in the pinnace, and rowed to the shore to make a present in return. We found the Latoo sitting at a little distance from the beach; and captain Cook gave him a shirt, a saw, a hatchet, a brass kettle, and several articles of less moment, all which he received with sullen gravity; this deportment he never varied, except once, when he was seen to smile as he conversed with Attagha.

25. See Mr. Dalrymple's Historical Collection, vol. II. p. 46.

[179 cont.]

103 6. Tasman calls it Kaybay in his map.

193 thirteen low islands, each of which the natives named to us.

175

[180] We hastened ashore after breakfast, to resume our enquiries.

122 We soon left the beach, where the natives were again assembled in great

197 numbers of both sexes. A most beautiful kind of lily (crinum asiaticum)

126 was the first plant which we met with and several others, not less valuable,

175 were collected soon after. We came to the watering-place, which was a

312 pond about a hundred or a hundred and fifty yards long, and fifty broad;

175 it contained stagnant water which was somewhat tainted with a brackish taste, and might perhaps have subterraneous communications with the

648 salt lagoon, which in one place adjoined to it. Lieutenant Clerke, who

175 superintended the waters, told us that his musket had been nimbly snatched

197 away by one of the natives, who instantly ran off with it. We advanced

175 to the salt lagoon, and botanized, among the spacious man-groves which

[126] surrounded it. These trees occupy a vast space of ground, and grow more and more intricate by age. Their seeds do not drop off, but shoot down from the top of the tree, till they reach the ground, where they take root,

648 and spread new branches. Whilst we were here, we heard three great guns

175 fired; but the sound being broken by many intervening objects, we suspected that they were only muskets overcharged as usual, by some young gentlemen

609 on a shooting party. We left the lake soon after, and passed through a

175 plantation, where the natives bowed to us very kindly, and invited us to

648 sit down amongst them. [181] We were desirous of making the most of our

721 time, and therefore soon left them, and returned to the fresh-water pond.

175 Having fired a musket at some wild-ducks, which were in great plenty, we were called to by Mr. Gilbert, the master, who told us that a volley of small arms, and three cannon had been fired to alarm and bring us back,

[186 cont.]

The island of Namoka, which we left after a stay of two days only, was not above fifteen miles in circuit, but seemed to be remarkably populous. It lies in 20° 17' S. and 174° 32' W. In the group of islands which appeared around it, its size was the most considerable but all seemed to be well inhabited, and very rich in vegetable productions. They are situated on a kind of bank, on which there is from nine to sixty and seventy fathom water, and the soil is probably the same in every island. Namoka consists, like Tonga-Tabboo, of a coral-rock, covered with a rich mould on which all sorts of vegetables thrive. We had no time to examine the hillock in its centre, which seems to have had a different origin, and may perhaps be volcanic. At present it is wholly covered with the richest groves, like the rest of the island. The abundance of fresh water in the pond, is an advantage which the people of Namoka enjoy [187] in preference to those of Tonga-Tabboo; but it does not appear that they bathe so regularly as the Taheitians, perhaps because the stagnant water is not very inviting. Its advantage is however so much felt, that the natives brought it to the ship in calabashes, and did the same to Tasman, which implies that it is looked upon as a valuable article among them. The abundance of water, and the richness of the soil likewise seems to be the reason, that bread-fruit and shaddock trees are much more frequent, and all vegetation infinitely more luxuriant than on Tonga-Tabboo. The fences on that account are not laid out, and kept up with that extreme regularity, though they are still preserved in part. The long walks of fruit-trees, and the delightful green turf under them, were rather to be compared to the richest spots on Ea-oowhe, or Middleburg Island. The tufted arbours which vaulted over the paths, are hung with beautiful

[191 cont.]

122 to several low islands, all which seemed to be well inhabited and fertile, like so many beautiful gardens. After dinner the wind became contrary, and abated, so that we rather lost than gained ground.

499 A few canoes came up with us again, for the natives spared no labour
175 to obtain our nails and rags of cloth. Towards evening we were surrounded by a little fleet, and the trade was very brisk, chiefly for the utensils and arms of the islanders, which are made with remarkable neatness.

648 The canoes returned once more to us the next morning [June 30]
175 putting off at day-break from all the little islands in sight. Their
502 appearance and their sailing afforded us much entertainment. Before
175 the wind they go extremely swift, being well contrived for that purpose, and their broad triangular sail gives them a very picturesque form
122 at a distance. We left them in a short time, when the breeze freshened, and [192] sailed towards the two high islands, which we had discovered
439 whilst we lay at anchor. In the afternoon three canoes came up
175 with us again; and one of them, with 50 men on board, traded with us
101 just as we were in the narrow passage between both islands. The larger,
175 to the southward, which is called Tofooa, appeared to be inhabited.
197 Some of the natives on board our ship told us it had fresh water,
175 together with coco-nut, banana, and bread-fruit trees. We saw indeed
[312] a number of palms, and a great quantity of the club-wood. The whole island, though steep, was in some places covered with verdure or shrubbery.
193 Towards the sea, and especially towards the other island, the rocks
175 seemed burnt, and black sand covered the shore. We approached within a cable's length of it, but found a depth of eighty fathom, which prevented our coming to an anchor. The rocks towards the passage,

368 Besides dwellings and the attendant secondary buildings, Puke has
366 a church, a town building, a kindergarten, a clinic and a store. All except the last are grouped on a small piece of land donated by the noble for community purposes. The store is located next to the house of the store owner.

491 An unsurfaced road connects the village with the main road and
494 buses traveling the main road are usually the only form of motor trans-
365 port used by the villagers. A power line runs beside the main road but no feeder line has been extended to Puke and there is no other source
312 of electrical power. The major sources of water are rain catchment and storage in brick and cement cisterns. There are also a few hand-dug wells from which water is obtained by rope and bucket.

Village Demography

162 Village population in 1971 was 261 persons living in 42 households.
[592] Table $5_A^A$ describes the population by age and sex. The population has
(166) grown considerably since 1955 due largely to migration from more remote
(161) islands of Tonga (See Table $6_A^B$ for origin of household heads and Table $7_A^C$
369 for crude growth rates). Puke, being close to Nuku'alofa, has experi-
166 enced the effects of rural-to-urban migration in the archipelago (See Walsh 1969: 95-98). Recent immigrants have come to Puke because it provides easy access to services centered in Nuku'alofa not available in most of the more rural locales. Opportunity for education and better health care are frequently given as reasons for wishing to live close
166 to Nuku'alofa. Informants also mention the greater availability of

$A_A$, $B_A$; $C_A$ [See pp. 27-29 respectively--Analyst]

[TEXT CONTINUED ON PAGE 30]

241 planted is usually of less importance than the first and so on until the land is returned to fallow status. A typical garden sequence is yam ('ufi), perhaps two crops in succession of taro (talo), and then cassava (manioke) is planted until the plot is exhausted. The amount of care given a garden is an indication not only of the amount of care a certain crop might need, but also indicates the social value derivable from that crop. Thus yams receive more care than taro, and so on.

[412] All gardening done in Puke is accomplished with the use of three hand tools: the ubiquitous bush knife, the push hoe, and a long-handled spade. Fallow periods plus whatever nutrients the soil might receive from burning the brush before a first planting are the only aids utilized to refurbish the soil. Commercial fertilizers provided free by [654] the Agricultural Board are, however, now being used on palms. Ususally no effort is made to prevent wandering animals from a garden and pigs sometimes do extensive damage.

[731] In some years droughts threaten crops in the dry, cool months from [732] May to November, but irrigation is not practiced and is not practical [312] because of limited sources of water.

241 Most garden work is accomplished by men but wives often assist,
461 particularly in weeding. A Tongan anecdote proclaims that if a man takes his wife to the garden and has her work so that his work will take him toward her, he will be able to work much faster; but the situations both explicit and implicit in their theory are more fiction than real.

[476] Men usually do choose to work together with at least one other man, and work groups of two to four are quite common. Sociability is important

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9



Presumably, the unintentional introduction of certain weedy species occurred at the same time. A good many cultivated species, together with many weeds, owe their presence to the visits of European ships, starting early in the seventeenth century and continuing with increasing frequency to the present time. Some of these alien species find optimum conditions for growth and multiplication, and have undoubtedly played a part in limiting or even exterminating some endemics or indigenous species through aggressiveness. A high percentage of the usual strand and weed species includes those frequently found on other Pacific islands and elsewhere in tropical countries.

There is little fresh water available other than that impounded in tanks from rainfall. Aside from occasional small localized areas, the low coral islands present a monotonous repetition of plantation weeds and fallow-resting plantations of second-growth "bush." The dominant crop is coconuts, and large areas have been cleared for the extensive plantations found on most of the islands. At present, the high market value of copra makes it the most important source of income for the islanders. The second most important export crop is bananas, of which 50,000 or more cases are shipped annually to New Zealand. The more rugged topography of 'Eua, and to a somewhat lesser extent of Vava'u, prevents the cultivation of some parts of the islands. As a consequence, there are more opportunities on these islands for the survival of native species. Some of the islands, especially 'Eua and Kao, still have significant timbered areas with some of the tree species reaching a diameter of more than a meter and offering a source of timber. Lumbering operations are being developed by the government on 'Eua which, together with the fact that more and more of the forested land is being cleared for new plantations, threaten to reduce or eliminate many of the native species. Too, this has caused a soil erosion problem on some of the slopes. Lumbering operations on the volcanic islands of Late, Tofua, Kao, and Tafahi, because of the present lack of harbor facilities, are all but impossible. It seems improbable, therefore, that much timber will be cut on those islands in the immediate future, and it is on those islands that many of the native species will have the best chance of survival. However, with any marked increase in population, it will eventually become necessary to colonize and develop such islands.

The climate of Tonga is pleasant during most of the year. The annual temperature ranges from a low of around 75° F. in July and August to a high of 85° to 90° F. from January to March. Slightly higher or lower temperatures are not infrequent. The humidity is comparatively high, ranging from about 88° in the warmer months to a low of around 72° in the winter period. The average mean rainfall is about 80 to 90 inches, with the wettest season during the first six months of the year.

The collections upon which this report is based were made on the islands of Tongatapu, 'Eua, Nomuka, Lifuka, Kao, Vava'u and Niuafo'ou between February and June 1953. Projected visits to 'Ata, Tofua, and Late were aban-

87: Wood M,Y-4,5 (no date) 1932 OU9 Tonga OU9



'Uiha is the burial-place of great chiefs, including Tubouniua, Tubouto'a, Tevita 'Uga and Vuna. The finest mound ('eji) in Tonga, named Maka Hokovalu, is situated on the north-west of this island. The village of 'Uiha also boasts six cannon taken from a kidnapping ship which met its merited doom while making a raid on the island about the middle of the 19th century.

Tugua was the residence of the highest personage in ancient Tongan society, the Tamaha.

Nomuka, in the south of the group, was visited by more voyagers than any other island in Tonga. The pond of fresh water from which Tasman, Cook, Bligh and others took supplies is readily pointed out.

Navigation lights have been placed at Muifuiva, in the south, and at Muitoa, Ha'ano, in the north of Ha'abai. Some islands cannot be approached in bad weather. Many of the smallest ones are uninhabited, though there are various traces of former habitation or of use for plantations or burial-places at Ofolaga, Kelefesia and the 'Otu Tolu.

VAVA'U OR HA'AFULUHAO. Three-fifths of this beautiful northern group is in one island, 'Uta Vava'u, but the remaining islands are only separated from the mainland by narrow channels. All these islands are comparatively high and undulating, thickly-wooded and very fertile. The highest point is 670 feet. From the hill called Talau, behind the chief town, Neiafu, a magnificent panorama can be obtained, embracing all the islands in the group. Along the northern coast of the main island there are very fine views from the high cliffs at the seat ('eji) of Salote near Hologa and at Ha'alaufuli.

The harbour of the main island is one of the most picturesque in the Pacific, though shallows and sandbanks make navigation difficult in some places. The Swallows' Cave, often visited by tourists, is on the north of Kaba. The secret cave, entered only by diving, which Mariner's story and Byron's poem have made famous, is situated on the north of the island of Nuababu ; here the young chief left his bride until they could embark for Fiji and be safe from the wrath of their relatives.

Neiafu, the port and residence of the governor, is beautifully situated, and good roads radiate from this centre. Until recently at least the average prosperity of the natives in Vava'u was rather higher than in other parts of the group, and they have expended their resources on European houses and European food to a greater extent than elsewhere. Vava'u is not as subject to hurricanes as the more northerly islands of Niua Fo'ou and Niua Tobutabu, but nevertheless it has suffered rather frequently, the last occasion being 13th March, 1932.

It is remarkable that Vava'u was the last part of Tonga to be discovered, the honour falling to the Spaniard, Maurelle, in 1781.

Various places recall the incidents mentioned in Mariner's history, and especially Feletoa, where the great fight of Finau Ulukalala II took place and where Finau himself was buried in 1809. Parts of the great trench, and also a cave and underground river, may be seen at Feletoa.

An ancient but incredible tradition states that a long wall of coral stones at Makave, known as the Kilikilitefua, was made by casting a stone for every first-born son in the district.

87: Wood M,Y-4,5 (no date) 1932 OU9 Tonga OU9



## VOLCANOES.

The active volcanoes are Tofua and Fonua Fo'ou (Falcon Island), which have been described. Niua Fo'ou erupts every few years and is classed as dormant. Late and Fonualei may be called dormant, though many years have elapsed since they last erupted. 'Ata, Huga Ha'abai, Huga Toga, Kao and Tafahi are quite extinct. Submarine eruptions have been reported in recent years south-west and north-west of Togatabu, between 'Ata and Huga Toga.

## LAKES.

In the craters of Tofua and Niua Fo'ou there are fairly large lakes, the lake in Tofua covering over three square miles, and those in Niua Fo'ou totalling six square miles. There is a shallow, salt lake or lagoon in Nomuka, 443 acres in extent; this lake is remarkable for its fish ('ava) which remain fresh for two or three days. There is also a small and fairly shallow lake in south-west Vava'u.

Except small creeks which flow from springs in 'Eua, and one in Niua Tobutabu, there are no rivers in the Tongan group, owing to the islands being small and mostly flat. Consequently, there is no wild animal life, and birds are comparatively few.

## CLIMATE, ETC.

The climate of Tonga is semi-tropical and not as hot as Fiji and Samoa. Nevertheless, in midsummer the humidity is fairly severe, especially in the northern islands. Cool nights are generally experienced in Togatabu and 'Eua, and, compared with conditions in many other Pacific Island groups, the climate throughout Tonga is healthy.

The rainfall is fairly heavy, but much less than in Fiji and Samoa. The wet season is from the end of December to April; short but injurious droughts are sometimes experienced, more especially during the period October–December. The soil on coral islands is very porous, and water can be obtained by digging wells, but under modern conditions the people rely entirely on cement cisterns for drinking purposes.

Systematic meteorological records have been taken at Nuku'alofa only during the last six years (a comparatively dry period), and these include the following:—

| | | |
|---|---|---|
| **Temperature:** | Maximum, | 90.4 degrees (January, 1930). |
| | Minimum, | 51 degrees (July, 1930). |
| | Mean, | 74.6 degrees. |
| **Humidity:** | Maximum, | 100% on several occasions. |
| | Minimum, | 49% |
| | Mean, | 76.9% |
| **Annual rainfall:** | Maximum, | 74.39 inches (1927). |
| | Minimum, | 40.66 inches (1930). |
| | Mean, | 62.9 inches. |

Greatest number of days on which rain fell in one year: 193 (1927).
Least number of days on which rain fell in one year: 153 (1930).
Most rain in any 24-hour period: 8.52 inches (June, 1931).

133 Tongatapu is barely above sea level in the north, and rises very gradually towards the south, with the highest point being about 270 feet (85 meters) in the vicinity of Fua'amotu and Nakolo in the southeast. Most of the island is less than 60 feet (17 meters) above mean sea level.

In the north-central portion an extensive but shallow central lagoon, known as Fanga 'Uta or Tahi Kele, extends some four to six miles (6 to 10 kilometers) into the island. Around this lagoon and along the north coast of the island near the towns of Hofoa, Folaha, and Navutoka, there are low-lying swampy areas.

The upraised, windward south coast, or liku, has rugged limestone cliffs and terraces, ranging from about 20 to 150 feet (6 to 46 meters) in height. Along the south-western portion, there are extensive blow-holes caused by wave action on the porous limestone terraces.

The surface of the island is flat to gently undulating with only a few small hills rising above the surrounding terrain and no surface streams.

There are scattered reef islets, or motu, along the north coast and the entire island is surrounded by a broken fringing reef of variable width.

Owing to the absence of surface streams, subsurface hydrology is an important consideration. Some pumpwell irrigation is practiced and rainwater is collected in many storage tanks, but the main water sources are springs and wells. [312] [24]

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[312] and wells. Studies indicate that: the ground water table is always considerably less than a meter above mean sea level and it oscillates only a few inches; the effects of tidal oscillation (1.3 meters) on the water table extend only a few hundred meters inland; and the depth of the water table beneath the surface ranges from a few meters near sea level in the north to about 46 meters in the
[312] southeast. Also, a comparison of determinations made in 1959 and 1965 indicates that the chloride content in most wells is increasing, possibly as a result of seawater influx due to an excessively high pumping rate (Pfeiffer, 1971: 6-14).

As stated by Pfeiffer (1971: 1): "For additional exploitation of groundwater, it is necessary to know the thickness of the freshwater lens lying above the brackish and salty water in the deeper subsurface."

132 **Climate**

The island of Tongatapu is barely within the tropics, almost on the Tropic of Capricorn. The island is under the influence of the maritime tropical (mT) air of the Trade Wind belt and, according to Köppen's system, would be classified as having an Am climate.

127 The following climatic description is based primarily
654 on data from the government meteorological station in Nuku'alofa.

161 1840 by Wilkes may have been an excessively conservative estimate (Maude, 1965:46), and the figure of 19,186 obtained from the first official census in 1891 (Matoto, 1971:9) is probably a better indication of the Tongan population at its lowest point. From studies of population trends in the South Pacific in general, Keesing (1942:47) estimated that "the lowest points in Polynesian populations were reached variously from 1890 to 1910."

161 The trend of a declining population was reversed around
165 the turn of the century, especially after World War I (Table 6), although about 1600 Tongans died in the worldwide influ-
161 enza epidemic of 1918 (Gifford, 1929:330). Since then, Tongan population has grown rapidly and, at present, Tonga has one of the highest population growth rates in the world, approximately three per cent per annum (Dommen, 1971:6).

161 This rapid growth can be attributed to the development
743 of a medical service, the construction of hospitals, an
312 improvement of public water supplies, an increase in natural
178 immunity to foreign diseases on the part of Tongans, and post-World War II economic prosperity.

161 From 1921 until the last official census in 1966, the
166 population of the Kingdom increased by about 225 percent and the population of Tongatapu increased by 390 percent,
168 partly owing to immigration from the outer islands. The
842 Tongan government hopes that the present "family planning" campaign will help to reduce this growth rate.

241 Because there are no surface streams on Tongatapu, the
312 required water must come from either wells or storage tanks. Of 134 sample households, only 33 percent water for cropping on their bush allotments. Of the 134 households, 13 percent had wells; 1 percent had cement catchment system; and 20 percent transported water from their town allotment or from other bush allotments. There are motorized pump irrigation systems on large plantations, lands of the missionary societies, and on a few bush allotments that were not included in the sample survey.

On town allotments irrigation is more prevalent. Out of 150 sample households, there was a greater percentage of households with dependable water sources: 29 percent with wells, 15 percent with cement tanks, 9 percent with corrugated iron tanks, 9 percent with private piped-in water, and
[365] 70 percent with access to a public water system. In the area of Nuku'alofa where there is a public water system, there is a corresponding increase in the intensity and
241 diversity of cropping and planting or ornamentals. This
231 however, is due partially to a law prohibiting unpenned or
656 untethered pigs and other animals in town.

242 The Department of Agriculture's Experimental Farm at
654 Vaini and a number of missionary societies have experimented
241 with a wide variety of new crops in an attempt to improve subsistence and commercial agricultural production. These
241 experimental crops, as well as many past introductions such
242

241 stay overnight at the bush allotment.

241 Wells were found on 6 allotments and a cement rain -
312 catchment tank was present on another. On 4 of these, there were permanent dwellings and on 3, garden vegetables were grown.

241 There were 11 allotments with copra driers; 7 of these
245 had permanent dwellings and two had substantial temporary dwellings.

241 Good condition barbed-wire fencing was found around
417 parts of 10 allotments, poor condition fencing around 2, and another 24 had some fencing along one side or across
241 the central portion of the allotment. In almost all cases, fences were used to protect crops from livestock, particu-
241 larly horses. Although treated wood fenceposts are becoming
417 increasingly common, living fence posts such as ngatae
245 (Erythrina variegata) and fiki (Jatropha curcas) are more common.

241 As for accessibility, 89 allotments had some kind of
491 roads bordering or through the property; of these, only 29 had paved coral or black-top roads. In about half of the cases where allotments had unpaved roads, these were often impassable, except by horsecarts. There is a continuing effort to improve accessibility by expanding the paved feeder-road system.

241 There were 10 allotments with pigs; in 7 cases, they
231 were either tethered or roaming free. On all but one of

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serves as a border rather than a true hedge or fence. The hedges and fences are useful for ornamental purposes, to delineate property lines, and to protect gardens from livestock damage.

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Table 44. Frequency occurrence of specific fence types on 192 town allotments (113 in Nuku'alofa and 79 in rural villages).

| Fencetype | Nuku'alofa Occurrences | Rural Occurrences |
|---|---|---|
| Hibiscus spp. | 45 | 18 |
| Nothopanax spp. | 45 | 11 |
| Barbed Wire | 34 | 19 |
| Cordyline terminalis | 26 | 4 |
| Acalypha spp. | 14 | 1 |
| Erythrina variegata | 9 | 0 |
| Thunbergia erecta | 8 | 4 |
| Jatropha curcas | 7 | 0 |
| Wood | 0 | 1 |

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One major difference between the Nuku'alofa and rural town allotments is the greater availability of water in Nuku'alofa (Table 45). In the rural villages, although some wells and rainfall catchment systems exist, there were no private water systems and most people depended

312 upon a common public water tap.
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Table 45. Frequency occurrence of specified water systems on 192 town allotments (113 in Nuku'alofa and 79 in rural villages).

| Water System | Nuku'alofa Occurrences | Rural Occurrences |
|---|---|---|
| Private tap | 41 | - |
| Well | 48 | 2 |
| Rainfall catchment | 41 | 13 |

231 There was also considerable livestock keeping on town allotments which, in many cases, tends to affect the types
231 of plants that can be grown there (Table 46). Chickens,
369 goats, cattle, dogs, and cats were found with similar frequencies on town allotments in both Nuku'alofa and the
[235] rural villages. Of the 141 allotments with chickens, 19
[241] allotments had improved chicken breeds for egg production, 13 of these in Nuku'alofa. Pigs and horses, however, which cause the most widespread damage to crops, were much more abundant on rural town allotments. Furthermore, in Nuku'alofa, on only 7 percent of the allotments were pigs allowed to roam free, whereas in the rural villages, pigs were allowed to roam free on 57 percent of the allotments.
[241] Even in Nuku'alofa, where it is illegal for pigs and horses

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beetle, and coconut stick insect predation, with little or no attempt at control. The damage caused by these pests, plus damage to young palms by fire and escaped or grazing livestock, was considerable.

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Pest control, in general, was rare except for commercial crops. Here the purchase of pesticides, fungicides,
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and herbicides was usually borne or at least subsized by the Agricultural Department or the Commodity Boards. In the case of control of black-leaf-streak in bananas, misting oil was actually applied by Department of Agriculture personnel.

241
Formal irrigation systems were rarely if ever found
• 312
on bush allotments, and simple wells were found on only about one-tenth of all bush allotments. The use of water for irrigating short term crops such as vegetables and watermelons generally required carrying water in drums from the town allotments or from nearby wells.

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The effect of the "Green Revolution" seemed to be
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almost non-existent. Although the Government Experimental Farm has successfully grown a wide range of new plants such as sorghum, soybeans, rice, and macadamia nuts, very few have been integrated into traditional cropping sequences. In some cases, garden vegetables such as tomatoes, capsicum and bulb onions were planted, but these often required additional non-traditional and expensive inputs such as fertilizers, insecticides, fungicides, and irrigation.

241 range of subsistence products.

241 The average town allotment generally has at least one
351 main dwelling or sleeping house (fale mohe) plus a number
[342] of other structures, such as separate kitchens (peito),
[343] wash houses (fale kaukau), outhouses (fale vao), and in
[369] some cases pig sties. On a majority of the town allotments in Nuku'alofa, and to a lesser extent in the rural villages, fences were found around the entire allotment or around
[417] portions used for keeping livestock. Fences for livestock
[245] were usually of barbed wire. Those which were more ornamental or used to delineate property boundaries were often living fences or hedges, most commonly of Hibiscus spp.
241 and Nothopanax spp. Wells, rainfall catchment systems, and
312 private water pipes were common on town allotments in
369 Nuku'alofa. In the rural areas, water was generally obtained from centrally located village water pipes.

241 Within this setting, a great variety of livestock,
231 staple crops, and other valuable plants and trees were found. Almost all allotments had some livestock; over half had chickens, dogs, and pigs, while horses, cats, ducks,
241 goats, and cattle were found on several. In Nuku'alofa, the
231 law prohibits pigs and other animals except poultry roaming
369 free. On rural town allotments, however, over half of those sampled had loose pigs. These constitute a major deterrent
241 to the cultivation of certain crops. Staple crops were
369 cultivated in limited acreages on about half of all town

241 369 231 And finally, livestock husbandry was much more widespread on town allotments than on bush allotments.

241 178 Current Trends and Developmental Paths

Based on the nature of the Tongan agricultural system in 1971-72, there seemed to be some definite trends within the system and developmental paths that it might follow, all of which should lead to more intensive use of the land and increased productivity. Some of these trends or possible developmental paths include:

241 178 423 [427] Decrease in Leasehold Land and Expansion of Bush and Town Allotments

As leases expire, many are not being renewed and the land is in some cases being subdivided into bush and town allotments. More recently, bush allotments are often four acres in size and town allotments less than one-quarter acre. The existence of these smaller allotments should lead to more intensive cultivation, as was the case with most of the sampled undersized allotments.

241 178 Increase in Scientific Farming Methods

[654] [242] [312] As a result of government encouragement and subsidies, there seems to be a definite increase in plowing and disc harrowing; the use of pesticides, fungicides, herbicides, and fertilizers; the introduction of new crop varieties; the use of fencing; and dependence on some form of irrigation.

245 654 435 Increased Coconut Acreage

Owing to the continued efforts of the Coconut Replanting Scheme and the high copra prices in 1974, there should be a major increase in the acreage of systematically planted coconut palms in the next five or ten years.

231 654 Possible Expansion of Livestock Husbandry

Because of government livestock subsidy schemes, there is likely to be an expansion of livestock husbandry and pasture improvement. The expansion of pig and poultry husbandry seem to offer the best prospects because of the limited land area and water resources on Tongatapu. Accordingly, Hardaker (1971:70) discouraged a widespread expansion of cattle ownership.

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134 241 178 Declining Soil Fertility

Owing to the increasing cropping period and associated decrease in the fallow period, the inherent soil nutrient status and structure of Tongatapu soils have deteriorated considerably. In almost all cases, today's farmers feel that farmers of previous generations received much higher yields due to more fertile soils. The relative amounts of nutrients stored in fallow vegetation depend on the extant to which trees and shrubs have been destroyed, because grasses and herbs store relatively smaller quantities of nutrients. As a result, there is less addition of humus and nutrients to the soil both through litter and root production and through burning. Furthermore, the

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97: Stewart G-3 (1960) 1961
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of the Fly and Worm, Election of Office-bearers and Project Leaders, The Balanced Diet, all helped to focus attention, and dramatisation of a successful branch meeting summed up the week's suggestions. For each course we had a series of quite superb interpreters from among the delegates. During the last week several sessions were taken by Princess Mata'aho, who had helped us on arrival with valuable translations of cooking recipes.

As a means of demonstrating the importance of local resource personnel in village programmes, help was sought from the Medical Department for three of the morning sessions. The Public Health Inspector discussed with the group the findings of the recent village inspections and the means of coping with unsolved sanitation problems; the Sister Tutor from Hospital talked of infant care and home nursing, answering innumerable questions of every variety.

Water is one of Tonga's main needs, and WHO has been holding discussions with the Government on increasing the supply. A Filipino engineer, Mr. B. Adan, is working on a pilot scheme of sinking a well with village assistance as a preliminary to further development. He held a popular and prolonged session with each course explaining the technique and demonstrating how villagers could co-operate in the maintenance of a healthy supply of water.

### Annual Show in October

The work of the *Langa Fonua* is gathered up annually in their October Show with its competitions in various types of Tongan crafts, sewing (including garment making), cookery, garden produce, flowers and poultry. It is the

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744 164 758 group the severe cases are usually isolated; huts are built for them outside the village on the beach, relatives drop food there, and after a few years these tubercular patients die.

744 312 Though the systematic teaching of hygiene in all schools has even been able to intensify the ancient Polynesian feeling for cleanliness, it has not yet gone so far as to teach the natives to be more careful about how they obtain their drinking water. With the 312 exception of 'Eua, the entire Archipelago has no running water; the wells dug by the Tongans often contain brackish water, and people are generally dependent on the rain water they collect. Today this mostly runs into self-built cement tanks (also into old drums and tin containers) from the corrugated iron roofs; (89)

89. Occasionally one also sees palm branches nailed perpendicularly to the coconut trunks, with a collecting vessel placed underneath.

the larger cement tanks of the government found in all villages are often a valuable asset in times of drought. However, since most of the tanks never become completely empty (90)

90. A puddle almost always remains even in periods of drought; in one auxiliary hospital the author was informed that the tank there "has never been quite empty since 1914."

and are usually inadequately covered or entirely open, (91)

91. Numerous mosquito larvae as a rule cling to the surface of the water.

the drinking water, which is almost always drunk unboiled, is never altogether clean. On Nomuka people even use the unboiled, muddy brown water of a small pond in which pigs wallow, for making the kawa drink. The number of illnesses resulting from these conditions [164] seems, however, to be astonishingly small.

/195 cont./

252 177 [439] coconut milk; less frequently they fry it in a pan with onions (and tomatoes). Rice, which is very popular but not always easily obtainable, apparently because of importing difficulties, is boiled in water with coconut milk and sugar added. Likewise, on the smaller islands, some natives know how to bake cakes in English fashion; they are made (only for special occasions) of flour, sugar, baking powder, creamed butter and bright yellow coloring. A few Tongan women also know how to make an English pudding with flour, shortening, sugar raisins and baking powder. Almost everywhere one finds the dumplings (topai) cooked in water and the very popular fried cakes (keke) that consist of a flour dough with baking powder and are fried in pans, usually with imported shortening. On only a few of the more important islands (Tongatapu, Vava'u, Lifuka) white bread is today baked by Tongans in simple, self-built ovens; this is so popular that the demand constantly exceeds the supply.

271 272 As beverages the Tongans use chiefly collected rainwater, as well as the fruit water of young coconuts, as in the past, (505)

505. See J. Cook, Beschreibung...loc. cit. VI. p. 288; W. Ellis, An authentic narrative... I. p/ 97.

312 177 at any time during the day. The water supply of the natives has been improved during the last decades, with cement tanks (506)

506. From imported cement, sand and coral stones.

replacing the ancient Tongan "water pits" (lepa), (507)

507. See E. W. Gifford, Tongan Society, p. 178.

being built by natives on their own initiative or by order of the government; /196/ these /tanks/ catch the rainwater running down from the corrugated metal roofs of private dwellings, schools, administra-

312 tive buildings and churches. In addition, the natives on many islands make an effort to dig pits which furnish more or less brackish water.

/196 cont./

312 Occasionally, one also sees on the trunks of coconut palms, palm branches fastened lengthwise, which are supposed to catch rainwater flowing down the trunk, so that it runs into tubs, canisters or casks standing below. Naturally, the water which is sometimes kept unprotected for a very long time is seldom perfect according to European standards. (508)

508. See p. 55.

272 Nowadays, the natives also like to prepare refreshing beverages from grated coconut meat and fruit pulp, for example 'ota 'i mango ( a mixture of grated green mangoes, grated coconut meat, water and sugar), 'ota 'i meleni (prepared in the same way but with grated watermelon instead of mango), and 'ota 'i faina (the same, but with grated pineapple instead of melon). These drinks are perhaps a further development of the traditional 'ota 'i si (consisting of coconut meat, the juice of the Cordyline terminalis root and water) which is still made. The popular drink vai siaine, for the preparation of which sliced ripe bananas (of the siaine variety) with coconut milk (squeezed out of grated coconut meat) and water are heated in the earth-oven, corresponds to the ancient Tongan beverage vai hopa (that is, with the hopa variety of banana) observed by Mariner; (509)

509. See J. Martin, loc. cit., II. p. 285.

nowadays, on the basis of this recipe, they also prepare "lo'i lesi" with Carica papaya cut in small pieces. The preparation of tea from (178) leaves of the plant moengalo (Melastoma denticulatum) growing on village properties, or of leaves of the orange tree is probably a (177) modern development. In a limited number of households beverages of imported tea, coffee and cocoa are also prepared, and for festive occasions soft drinks made of European ingredients and highly sweetened 000 with sugar have become very popular. Kava (510)

101: Clark K-4,5 (1974) 1978 OU9 Tonga OU9



000 expanded agricultural base and a program of commodity imports from nations still producing a food surplus; or (3) approach a level of population at which point natural controls (i.e., malnutrition and/or starvation) set in to bring the population into balance with the supporting capacity of the land.

166 178 [369] In addition to the basic difficulty of population-food imbalance, Tonga must also contend with the physical shifting of its population from rural to urban settings, and the economic shift of elements of the population from a traditional subsistence agriculture to a cash economy. Both of these changes in the character of Tongan population tend to aggravate the overall population-food and agricultural imbalance.

369 171 Rates of urbanization in the entire South Pacific region are among the highest in the world, when considered as a percentage of total population. If one includes the nations of Australia and New Zealand, the peoples of the South Pacific are the most urbanized in the world on a proportional basis (Urban Problems in the South Pacific, 1967, p. 2; Urbanization in the South Pacific, 1962, p. 1). Tonga, since the end of World War II, has seen rapid growth in its capital city, which has nearly tripled in size.

369 [182] This changing characteristic of the population has in itself had a significant impact on the natural environment of Tonga. In addition, as urbanization continues to expand, social issues including housing, public health, and sanitation grow proportionally.

[312] As in most other island environments in the South Pacific, water for